

Central Electric Light and Power Stations

TABLE 188.—CENTRAL ELECTRIC STATIONS: 1902.

ITEMS.	Total.	Private stations.	Municipal stations.
Number of stations	3,620	2,805	815
Value of construction and equipment	\$504,740,352	\$482,719,879	\$22,020,473
Net earnings from operation	\$84,186,605	\$77,349,719	\$6,836,856
Income from all other sources	\$1,514,000	\$1,385,751	\$128,249
Interest income	\$85,700,605	\$78,735,500	\$6,965,105
Total expenses	\$68,081,375	\$62,835,388	\$5,245,987
Salaries of officials and clerks:			
Average number	6,996	6,046	950
Salaries	\$5,663,580	\$5,206,199	\$457,381
Wage-earners:			
Average number	23,330	20,863	2,467
Wages	\$14,983,112	\$13,560,771	\$1,422,341
Power plant equipment:			
Steam engines:			
Number	5,930	4,870	1,060
Horsepower	1,379,941	1,232,923	147,018
Water wheels:			
Number	1,390	1,308	82
Horsepower	438,472	427,254	11,218
Generating plant equipment:			
Dynamos:			
Direct current, constant voltage:			
Number	3,823	3,405	418
Horsepower	442,446	418,913	23,533
Direct current, constant amperage:			
Number	3,539	2,957	582
Horsepower	195,581	157,768	37,763
Alternating and polyphase current:			
Number	5,122	4,300	822
Horsepower	987,003	896,315	90,688
Output of stations:			
Kilowatt hours—total for year	2,507,051,115	2,311,146,676	195,904,439
Total number of arc lamps	386,628	334,903	56,725
Total number of incandescent lamps	18,194,044	16,616,593	1,577,451

¹ Includes estimated income from public service.

NOTE.—These statistics cover all central electric light and power stations in operation during any portion of the year ending June 30, 1902. Central electric stations supply current for commercial and private uses, such as heating and lighting private dwellings, business houses, hotels, and office buildings, and furnishing power for street railways, elevators, manufacturing purposes, and charging batteries. Electric current is also supplied for public service, in lighting streets, parks, and municipal buildings, and for various purposes connected with their maintenance.

In addition to central electric stations there are two other sources of supply—light and power stations operated by electric railway companies and isolated electric plants operated to furnish light or power for the benefit of the owner. The statistics for the former are presented in the report on street and electric railways, but concerning the latter no detailed information has been secured.

A number of companies had been organized but had not, at the time of the canvass, commenced the construction of the plant, while others were in various stages of completion, but had not commenced the generation of electric current. In some cases it was difficult to decide whether a plant should be classed as a central electric station or as an isolated plant. The general rule followed was to classify as isolated plants all those which were operated as an adjunct to some other business, the principal object of the plant being to supply the light or power for another industry, only incidental income being derived from the sale of current. This resulted in the exclusion of a number of plants which were considerably larger than some of the central stations. The equipment of many of the isolated plants in large hotels and office buildings would enable them to furnish light and electric power required for cities and towns of considerable size. While it is estimated that there were from 45,000 to 50,000 isolated plants in the United States, the majority of them were comparatively unimportant; their location could have been determined only by a house to house canvass, their equipment was auxiliary to machinery installed for some other purpose, and, as the receipts and expenses consequent on their operation were entirely incidental to some other business, it was impossible to obtain reliable statistics concerning them.

During the year 1902 there were 232 electric railway companies that reported the generation of electric current for sale for light and power. Such plants are virtually central stations, and should be considered in connection with these statistics. Of the railway companies referred to, 118 reported that the generation of electric current for this purpose was of sufficient importance to enable them to give the number of lamps in use and the amount of income from the sale of current. Adding these 118 stations to the central stations enumerated in this report, the number would be increased to 3,738, the total income from the sale of current to \$90,458,429, the number of arc lamps to 419,561, and of incandescent lamps to 19,650,729.

The term "central electric station," as used in this report, sometimes includes a number of plants, located where two or more plants were operated by the same individual, firm, or corporation, and located in the same state, a separate report was secured for each whenever the system of accounts permitted the preparation of separate returns; otherwise one report was obtained to cover the operations of all plants. For instance, the Edison Electric Company, of Los Angeles, Cal., generates current in three mountain waterpower plants and four steam plants in different localities, all connected by transmission lines. These seven plants were included in one report and were counted as one station. There were 1,462 central electric stations operated by private companies or municipalities in connection with the manufacture of gas, the operation of waterworks or other industries. The statistics for such

TABLE 189.—COMPARATIVE SUMMARY—CENTRAL ELECTRIC STATIONS IN NEW YORK STATE: 1902 AND 1890.

ITEM.	1902	1890	INCREASE.	
			Amount.	Per cent.
Number of stations.....	256	180	117	84
Cost of construction and equipment.....	\$112,998,778	\$31,183,618	\$81,815,160	262
Total Income.....	\$16,854,839	\$4,174,584	\$12,680,305	304
From arc lighting.....	\$4,944,575	\$2,272,374	\$2,672,201	118
Private.....	\$1,818,498	\$951,810	\$866,689	91
Public.....	\$3,120,076	\$1,320,564	\$1,805,612	137
From incandescent lighting.....	\$7,976,282	\$1,585,834	\$6,390,998	403
Private.....	\$7,510,993	\$1,522,816	\$6,018,678	995
Public.....	\$435,288	\$63,518	\$371,720	686
From motor service.....	\$2,396,046	\$192,754	\$2,203,292	1,149
From miscellaneous.....	\$1,537,986	\$128,572	\$1,414,414	1,145
Total expenses.....	\$10,494,276	\$3,077,825	\$7,416,651	241
Salaries and wages.....	\$3,904,706	\$1,375,861	\$2,528,845	184
Supplies and materials.....	\$2,438,526	\$467,842	\$1,965,684	420
Fuel.....	\$1,494,048	\$513,794	\$980,249	191
Miscellaneous expenses.....	\$2,662,001	\$720,128	\$1,941,873	270
Total horsepower of power plants.....	323,413	59,512	263,901	443
Total horsepower of dynamos.....	251,007	41,844	209,163	500
Lighting service:				
Total number of arc lamps.....	59,130	19,834	39,296	198
Private.....	26,806	8,886	17,921	292
Public.....	32,324	10,949	21,375	105
Total number of incandescent lamps.....	3,315,445	286,985	3,028,510	1,055
Private.....	3,182,778	280,989	2,901,789	1,083
Public.....	132,667	6,996	120,721	2,181

TABLE 190.—COMPARATIVE SUMMARY—CENTRAL ELECTRIC STATIONS AND GAS PLANTS: 1902 AND 1900.

ITEMS.	Central electric stations, 1902.	Gas plants, 1900.
Number of establishments.....	3,620	877
Cost of construction and equipment.....	\$504,740,252	¹ \$567,000,606
Cost of supplies, materials, and fuel.....	\$22,916,932	\$20,005,556
Salaried officials and clerks:		
Average number.....	6,996	5,904
Salaries.....	\$5,668,580	\$5,278,500
Wage-earners:		
Average number.....	23,980	22,459
Wages.....	\$14,988,112	\$12,436,296
Income.....	\$85,700,005	\$76,710,093

¹ Capital.

stations relate exclusively to the generation of electric current; if book accounts were not available for exact information concerning the operation of the electric station as distinct from other business, careful estimates were prepared for the answer to each of the inquiries. But in cases where the central electric stations were operated by electric railways, the income and expenses incident to the generation of current for sale were so interwoven with the railway business that it was impossible to prepare separate reports, and the entire business of each company was included in the report for the railway.

The industry had not developed sufficiently to be enumerated at the census of 1890. The first information appears in the reports of the census of 1890, but as statistics are presented only for the central stations and isolated plants in New York state and the central stations in the District of Columbia and the city of St. Louis, no comparisons can be made to show the growth of the industry in the entire country.

The term "station," may include two or more electric plants, and as the date of installation of the station only is given, the figures do not indicate the total number of separate plants installed, several having come subsequently under one management. Each state and territory contains a number of central electric stations operated under private ownership, and all, with the exception of three territories, and the District of Columbia, Nevada, and Wyoming, report one or more municipal stations. Illinois contains the greatest number of stations operated under private ownership, and Ohio the greatest number under municipal control. The greatest proportion of central electric stations is found in the North Central states. In 1890 these states contained 43.1 per cent of all the electric stations in the United States, and in 1902 the proportion had increased to 47.1 per cent. The 79 stations had been installed up to 1890; this number increasing to 404 in 1902, or 411.4 per cent.

TABLE 191.—DISTRIBUTION OF CENTRAL ELECTRIC STATIONS AND GAS PLANTS IN CITIES OF DIFFERENT POPULATION: 1902 AND 1900.

POPULATION OF CITIES IN WHICH LOCATED.	Central electric stations, 1902.	Gas plants, 1900.
Total.....	3,620	877
Less than 5,000.....	2,714	200
5,000 but under 25,000.....	675	484
25,000 but under 100,000.....	128	124
100,000 but under 500,000.....	73	39
500,000 and over.....	30	30

TABLE 192.—NUMBER OF CENTRAL ELECTRIC STATIONS BEGINNING OPERATIONS DURING EACH YEAR.

YEAR.	Total.	Private stations.	Municipal stations.
Total.....	3,620	2,805	815
1902 (January 1 to June 1).....	146	108	40
1901.....	250	185	65
1900.....	213	152	61
1899.....	237	178	59
1898.....	277	195	82
1897.....	228	170	58
1896.....	193	129	64
1895.....	239	166	73
1894.....	191	144	47
1893.....	192	161	31
1892.....	247	190	57
1891.....	198	157	41
1890.....	227	198	29
1889.....	208	168	40
1888.....	160	142	18
1887.....	147	127	20
1886.....	100	86	14
1885.....	55	49	6
1884.....	47	43	4
1883.....	27	25	2
1882.....	30	27	3
1881.....	8	7	1

TABLE 193.—NUMBER OF PRIVATE AND MUNICIPAL STATIONS GROUPED IN CITIES OF DIFFERENT POPULATION, AND PERCENTAGE EACH GROUP IS OF TOTAL: 1902.

POPULATION OF CITIES IN WHICH LOCATED.	TOTAL.		PRIVATE STATIONS.		MUNICIPAL STATIONS.	
	Number.	Percent.	Number.	Percent.	Number.	Percent.
Total	3,620	100.0	2,805	100.0	815	100.0
Less than 5,000.....	2,714	75.0	2,044	72.8	670	82.2
5,000 but under 25,000.....	675	18.6	554	19.8	121	14.8
25,000 but under 100,000.....	128	3.6	115	4.1	13	1.6
100,000 but under 500,000.....	73	2.0	68	2.4	7	0.9
500,000 and over	30	0.8	26	0.9	4	0.5

TABLE 194.—NUMBER OF WAGE-EARNERS AT SPECIFIED DAILY RATES OF PAY—
PRIVATE STATIONS: 1902.¹

RATES PER DAY (DOLLARS).	All classes.	Fore- men.	In- spect- ors.	Engi- neers.	Fire- men.	Dynamo and switch- board men.	Line- men.	Me- chan- ics.	Lamp trim- mers.
Total	16,721	908	533	3,604	2,854	1,787	3,760	993	2,282
Less than 0.75.....	84	7	11	28	11	6	3	18	
0.75 to 0.99.....	173	2	7	23	71	8	34	5	23
1.00 to 1.24.....	789	6	13	152	261	96	146	5	110
1.25 to 1.49.....	1,319	12	31	365	364	126	228	15	177
1.50 to 1.74.....	2,940	52	60	657	628	328	620	104	506
1.75 to 1.99.....	2,081	33	66	354	418	245	380	161	324
2.00 to 2.24.....	3,671	89	134	724	513	407	772	268	764
2.25 to 2.49.....	1,604	75	62	286	287	261	808	87	253
2.50 to 2.74.....	1,733	120	82	382	128	176	621	156	68
2.75 to 2.99.....	794	74	19	166	122	54	275	67	17
3.00 to 3.24.....	798	158	33	208	32	52	225	85	10
3.25 to 3.49.....	284	113	10	97	3	20	23	12	6
3.50 to 3.74.....	189	76	9	58	2	4	21	18	6
3.75 to 3.99.....	42	13	2	21	—	—	4	2	—
4.00 to 4.24.....	119	44	2	57	2	9	2	3	—
4.25 to 4.49.....	22	13	—	9	—	—	—	—	—
4.50 to 4.74.....	16	3	1	12	—	—	—	—	—
4.75 to 4.99.....	8	6	—	1	—	—	—	1	—
5.00 and over.....	55	18	5	26	—	—	—	0	—

¹ Includes reports from 2,475 out of a total of 2,805 private stations.TABLE 195.—NUMBER OF WAGE-EARNERS AT SPECIFIED DAILY RATES OF PAY—
MUNICIPAL STATIONS: 1902.¹

RATES PER DAY (DOLLARS).	All classes.	Fore- men.	In- spect- ors.	Engi- neers.	Fire- men.	Dynamo and switch- board men.	Line- men.	Me- chan- ics.	Lamp trim- mers.
Total	2,157	50	24	805	486	101	839	46	806
Less than 0.75.....	49	—	1	2	28	2	5	1	15
0.75 to 0.99.....	56	—	—	6	28	1	12	—	9
1.00 to 1.24.....	201	1	—	59	73	9	33	2	24
1.25 to 1.49.....	294	4	—	104	108	12	37	4	26
1.50 to 1.74.....	440	7	—	168	117	20	66	3	59
1.75 to 1.99.....	233	1	4	84	54	18	40	3	29
2.00 to 2.24.....	418	5	7	168	74	16	63	8	77
2.25 to 2.49.....	203	7	5	65	8	13	28	14	63
2.50 to 2.74.....	166	12	5	90	—	4	47	5	33
2.75 to 2.99.....	29	3	—	15	—	2	3	4	2
3.00 to 3.24.....	34	5	1	23	1	4	—	—	—
3.25 to 3.49.....	25	3	—	18	—	—	2	2	—
3.50 to 3.74.....	2	—	—	—	—	—	2	—	—
3.75 to 3.99.....	1	—	1	—	—	—	—	—	—
4.00 to 4.24.....	4	1	—	2	—	—	1	—	—
4.25 to 4.49.....	2	1	—	1	—	—	—	—	—

¹ Includes reports from 722 out of a total of 815 municipal stations.

TABLE 196.—SUMMARY—PRIVATE AND MUNICIPAL

STATE OR TERRITORY.	Number of stations.	Cost of construction and equipment.	EARNINGS FROM OPERATION.			
			Total.	Arc lighting.	Incandescent lighting.	All other electric service.
1 Continental U. S.	3,620	\$504,740,352	1 \$84,186,005	\$25,481,045	\$44,657,102	\$14,048,458
2 Alabama.....	25	908,895	374,138	118,999	211,757	43,882
3 Arizona.....	13	810,341	288,019	34,220	209,019	44,780
4 Arkansas.....	42	1,082,505	413,775	123,418	259,695	30,662
5 California.....	115	36,547,474	4,946,090	1,000,066	2,305,252	1,640,772
6 Colorado.....	48	8,665,826	1,628,152	308,152	901,608	419,193
7 Connecticut.....	38	6,583,477	1,317,512	348,858	764,896	203,758
8 Delaware ²	10	4,667,770	742,080	118,925	443,804	179,351
9 Florida.....	26	974,425	323,414	60,625	217,851	14,938
10 Georgia.....	43	1,252,578	348,753	99,379	212,224	87,150
11 Idaho.....	19	785,030	191,126	41,780	143,755	5,591
12 Illinois.....	346	38,329,275	6,692,248	2,237,413	3,011,938	842,897
13 Indiana.....	180	6,706,510	2,038,121	970,378	945,757	121,986
14 Indian Territory.....	10	176,870	89,122	16,382	72,326	414
15 Iowa.....	169	8,554,234	1,477,348	347,856	1,041,788	87,704
16 Kansas.....	61	2,028,886	611,960	215,085	348,318	48,563
17 Kentucky.....	58	3,070,152	848,899	301,344	439,534	107,521
18 Louisiana.....	25	6,056,603	967,027	395,175	455,296	116,556
19 Maine.....	52	4,824,850	608,575	124,668	450,050	93,857
20 Maryland.....	32	7,157,986	951,316	332,940	522,468	90,518
21 Massachusetts.....	114	29,562,267	6,244,882	1,859,484	3,403,620	981,769
22 Michigan.....	201	11,559,169	2,516,800	887,667	1,398,828	230,805
23 Minnesota.....	188	9,236,505	2,888,806	467,809	1,148,457	223,040
24 Mississippi.....	43	899,477	341,546	78,762	240,631	22,153
25 Missouri.....	123	15,679,872	2,360,150	719,143	1,235,419	405,588
26 Montana.....	27	4,740,807	1,017,805	168,061	544,427	320,317
27 Nebraska.....	54	3,305,840	597,304	170,184	372,138	54,987
28 Nevada.....	5	301,785	44,549	6,572	37,827	150
29 New Hampshire.....	51	6,447,660	826,176	200,106	409,279	216,791
30 New Jersey.....	64	56,432,502	3,856,599	1,280,454	1,519,507	556,688
31 New Mexico.....	11	369,877	183,747	24,087	103,660	6,000
32 New York.....	250	112,998,778	16,742,239	4,944,575	7,976,232	3,821,432
33 North Carolina.....	38	808,986	241,903	84,916	141,460	15,527
34 North Dakota.....	21	416,843	197,375	42,709	139,816	14,850
35 Ohio.....	233	26,381,397	4,347,506	1,816,262	2,057,077	474,167
36 Oklahoma.....	10	420,646	178,331	57,901	108,018	12,412
37 Oregon.....	39	5,157,851	638,571	128,006	369,623	140,942
38 Pennsylvania.....	279	41,579,388	9,311,416	3,800,095	5,021,671	989,650
39 Rhode Island.....	7	5,428,796	985,595	393,473	423,300	168,822
40 South Carolina.....	24	2,442,989	356,066	82,001	98,972	175,093
41 South Dakota.....	28	623,504	204,292	67,351	141,903	5,038
42 Tennessee.....	54	3,603,088	911,555	189,324	527,093	195,138
43 Texas.....	137	5,510,491	2,049,295	382,603	1,371,078	295,514
44 Utah.....	16	7,521,780	604,240	92,431	342,995	228,814
45 Vermont.....	52	2,691,170	461,898	92,173	280,235	89,490
46 Virginia.....	37	1,039,847	210,176	70,834	131,301	8,041
47 Washington.....	40	3,537,022	739,743	163,780	422,494	153,469
48 West Virginia.....	41	1,123,449	320,443	114,179	192,987	13,277
49 Wisconsin.....	152	4,678,316	1,270,669	397,733	780,616	92,320
50 Wyoming.....	13	467,463	159,016	28,807	129,608	601
51 Alaska and Hawaii.....	5	927,723	225,584	26,230	175,299	24,005

¹ Includes estimated income of municipal stations from public lighting.² Includes 2 stations in District of Columbia, in order that the operations of individual stations may not be disclosed.

Central electric light and power stations.

STATIONS, BY STATES AND TERRITORIES: 1902.

Income from all other sources.	Gross in- come.	EXPENSES.					TOTAL HORSE- POWER.	
		Total.	Salaries and wages.	Supplies, materials, and fuel.	Rents, taxes, insurance, and mis- cellane- ous.	Interest on bonds.	Engines and water wheels.	Dyna- mos.
\$1,514,000	\$85,700,605	\$68,081,375	\$20,646,692	\$22,915,932	\$11,895,206	\$12,623,545	1,845,048	1,624,980
11,125	385,263	284,537	87,049	112,974	43,036	41,478	7,620	5,996
5,047	298,066	240,953	82,644	116,789	22,620	18,900	2,540	2,428
11,512	425,317	278,817	90,759	129,886	35,632	22,640	8,433	8,074
120,327	5,066,417	3,918,975	1,176,741	1,366,122	676,549	699,553	134,788	112,354
23,552	1,652,595	1,537,471	482,588	508,023	291,635	255,225	38,268	29,234
2,037	1,319,549	981,881	829,763	387,224	123,768	141,076	28,389	20,799
7,761	749,841	651,187	121,711	281,976	167,085	80,415	10,123	11,303
1,356	824,770	224,637	78,315	117,376	17,116	16,830	6,114	6,299
8,812	357,666	284,838	92,173	120,936	21,929	19,800	12,630	10,215
1,080	192,206	141,160	66,719	37,651	23,140	13,650	5,454	3,718
64,767	6,757,015	4,961,915	1,603,904	1,781,353	868,789	757,860	126,866	134,476
67,025	2,105,146	1,573,908	549,428	672,150	220,537	131,793	64,237	51,130
5,224	94,346	57,521	21,950	29,355	6,216	-----	1,475	1,360
68,915	1,545,663	1,223,682	406,819	524,035	160,489	131,739	39,604	33,389
38,807	650,833	480,482	107,762	210,053	77,420	25,247	18,283	11,524
1,637	850,086	709,284	216,438	287,281	183,135	72,830	21,415	20,123
4,604	971,631	682,939	226,050	218,118	88,608	150,163	13,767	10,431
28,776	692,350	571,089	202,724	174,627	102,597	91,239	24,889	20,398
10,891	962,207	735,663	204,888	282,523	116,965	101,287	19,740	17,703
96,062	6,340,914	4,708,732	1,588,866	1,530,471	1,309,668	279,761	214,213	121,479
97,012	2,618,812	1,948,546	728,952	754,184	260,082	205,828	64,888	59,217
19,933	1,858,789	1,459,874	433,256	588,685	208,987	228,946	34,823	28,149
25,388	366,984	277,719	95,300	187,754	30,405	14,260	7,660	6,844
31,999	2,392,149	2,042,422	884,197	732,724	278,395	347,108	45,818	43,080
8,166	1,025,971	600,476	218,802	205,700	123,684	112,730	31,887	29,564
4,473	601,777	431,342	140,190	160,920	66,209	54,924	12,308	11,276
44,549	39,687	14,776	18,720	3,391	7,800	1,720	1,024	980
6,146	832,322	554,967	187,933	151,968	96,126	118,940	28,096	23,820
61,705	3,421,304	8,113,914	821,789	953,342	438,616	1,204,687	68,761	61,824
1,560	135,307	102,201	34,740	46,722	14,009	6,780	1,780	1,321
112,600	16,854,839	14,706,366	3,904,706	3,927,500	2,662,001	4,212,090	323,413	251,007
8,230	250,133	192,775	67,996	79,605	16,038	29,136	6,566	5,551
314	197,689	157,275	47,260	85,072	19,673	5,270	8,930	2,737
88,582	4,431,038	8,286,336	1,053,991	1,268,948	621,767	841,630	103,745	93,580
8,775	187,106	119,018	39,979	58,102	10,377	10,500	2,932	2,587
63,011	691,582	499,632	167,765	90,394	71,053	161,490	17,708	14,967
175,651	4,486,867	7,547,967	2,055,416	2,353,418	1,330,588	1,768,596	175,610	162,719
40,812	1,266,407	808,161	238,724	305,918	218,772	39,747	17,600	16,272
30,944	387,010	272,729	75,642	110,452	27,345	59,290	21,205	17,950
8,576	207,868	157,971	58,116	75,256	18,099	6,500	5,057	3,900
927	912,482	587,032	165,041	222,762	92,378	106,861	19,003	19,754
25,833	2,074,588	1,471,981	609,181	603,056	262,800	42,915	34,887	34,997
60,113	714,353	607,769	177,391	156,722	118,701	154,055	20,460	18,664
23,607	485,505	338,883	132,645	107,472	53,848	39,888	23,857	15,398
456	210,632	171,185	68,249	69,276	22,915	10,745	5,448	5,181
43,908	783,651	651,495	218,177	250,912	97,578	84,828	22,894	18,337
1,572	922,015	229,558	95,343	101,557	28,860	3,698	10,820	9,868
17,851	1,288,020	957,021	324,808	404,606	132,280	95,827	85,716	80,990
200	150,216	111,582	46,125	40,099	18,325	7,038	3,229	2,455
128,405	853,039	277,382	98,554	133,116	44,712	950	3,714	3,144

TABLE 196.—SUMMARY—PRIVATE AND MUNICIPAL STATIONS, BY STATES AND TERRITORIES: 1902—Continued.

STATE OR TERRITORY.	Output of stations, kilowatt hours, total for year.	Electric line construction, miles of mains and feeders.	NUMBER OF LAMPS.		AVERAGE NUMBER OF EMPLOYEES AND TOTAL SALARIES AND WAGES.			
			Are.	Incandescent.	Salaried officials and clerks.		Wage-earners.	
					Average number.	Salaries.	Average number.	Wages.
Continental U. S.	2,507,051,115	125,144.14	385,698	18,194,044	6,996	\$5,668,580	23,330	\$14,988,112
Alabama.....	11,616,707	468,94	2,033	61,373	41	31,637	121	65,412
Arizona.....	3,662,045	119,50	295	36,556	28	30,545	58	52,039
Arkansas.....	9,965,997	540,78	1,651	82,234	36	27,354	113	63,405
California.....	152,728,042	5,080,16	15,764	1,006,875	351	305,587	1,000	781,154
Colorado.....	60,177,084	1,356,93	4,770	295,608	185	141,885	483	840,708
Connecticut.....	26,738,121	2,054,91	6,399	271,805	104	106,807	395	222,956
Delaware.....	17,871,872	473,94	3,144	157,671	46	34,729	168	86,982
Florida.....	8,066,078	373,25	1,106	61,144	30	18,044	106	55,271
Georgia.....	9,911,243	555,00	1,452	60,189	56	32,467	147	50,706
Idaho.....	5,018,149	211,75	557	83,262	23	19,790	65	46,029
Illinois.....	161,548,646	8,347,00	38,215	1,567,665	580	480,947	1,750	1,122,957
Indiana.....	75,585,493	4,508,94	15,325	656,451	248	156,360	698	308,068
Indian Territory.....	1,196,411	130,22	197	13,504	7	5,850	27	16,100
Iowa.....	36,506,425	2,783,36	5,929	420,847	196	117,589	536	289,230
Kansas.....	13,826,513	1,072,08	3,498	128,857	78	44,606	214	123,168
Kentucky.....	27,835,614	1,070,50	4,598	142,662	75	60,563	292	155,876
Louisiana.....	17,474,261	516,29	4,278	185,598	78	67,090	268	168,951
Maine.....	21,987,700	1,697,65	2,264	204,632	88	50,896	252	152,830
Maryland.....	22,128,125	6,715,04	5,761	126,087	83	58,444	258	151,444
Massachusetts.....	123,813,392	13,448,96	28,790	1,420,963	459	471,250	1,565	1,117,586
Michigan.....	80,564,630	4,720,26	17,712	805,127	313	208,694	942	625,258
Minnesota.....	40,288,632	2,036,94	8,543	884,705	175	123,653	474	309,603
Mississippi.....	9,825,926	588,00	1,035	85,111	44	29,422	138	65,878
Missouri.....	57,450,731	4,022,82	18,144	593,798	219	185,715	778	498,482
Montana.....	36,495,766	648,69	1,648	101,868	58	78,308	149	144,994
Nebraska.....	12,315,775	1,503,15	2,608	151,182	55	42,801	182	106,389
Nevada.....	1,508,910	26,50	78	8,218	7	5,460	11	9,376
New Hampshire.....	27,377,793	1,426,75	2,879	170,541	77	46,580	217	141,853
New Jersey.....	78,739,456	6,160,88	15,655	646,762	258	265,566	816	566,173
New Mexico.....	2,637,810	125,50	272	22,507	12	11,320	38	23,420
New York.....	701,769,716	13,844,22	59,130	3,705,525	897	814,600	4,524	8,090,106
North Carolina.....	8,351,346	448,10	1,178	45,181	45	27,934	96	40,062
North Dakota.....	5,830,115	150,00	502	41,916	25	16,470	60	30,790
Ohio.....	127,437,383	7,246,12	31,839	984,213	465	268,190	1,301	790,801
Oklahoma.....	2,629,352	303,00	717	23,849	14	13,420	44	26,649
Oregon.....	17,531,660	1,502,17	2,028	95,045	46	61,340	141	106,415
Pennsylvania.....	241,094,328	15,127,14	47,722	1,783,688	713	635,721	2,467	1,559,694
Rhode Island.....	23,436,485	3,690,50	5,161	196,188	38	71,494	236	167,230
South Carolina.....	18,426,763	323,15	1,366	46,068	40	26,479	120	49,168
South Dakota.....	4,256,007	237,00	798	63,248	22	18,068	68	40,048
Tennessee.....	24,472,682	1,403,50	8,662	174,201	65	48,987	241	116,054
Texas.....	48,888,450	1,502,38	5,146	303,591	178	127,747	600	881,434
Utah.....	32,457,063	568,82	1,469	92,166	69	57,543	171	119,848
Vermont.....	22,374,060	1,746,03	1,534	161,106	89	39,595	158	98,050
Virginia.....	6,879,243	434,37	1,278	37,645	68	22,071	107	46,178
Washington.....	19,722,262	523,18	2,977	108,443	75	68,365	199	140,812
West Virginia.....	11,855,905	514,88	1,898	78,066	44	19,080	134	76,818
Wisconsin.....	29,966,758	2,601,84	7,416	428,980	181	85,158	494	239,150
Wyoming.....	8,883,285	94,75	259	22,082	18	11,950	40	34,175
Alaska and Hawaii.....	3,722,600	175,90	282	34,916	27	27,787	83	70,767

¹ Includes 2 stations in District of Columbia, in order that the operations of individual stations may not be disclosed.

TABLE 197.—DETAILED SUMMARY, UNITED STATES: 1902.

ITEMS.	Total.	Private stations.	Municipal stations.
Number of stations.....	3,620	2,805	815
Condensed statement—income and expenses:			
Earnings from operation, total.....	\$84,186,605	\$77,849,740	\$6,886,856
Arc lighting.....	\$25,481,045	\$22,091,800	\$3,389,245
Incandescent lighting.....	\$44,657,102	\$41,297,484	\$3,359,618
All other electric service.....	\$14,048,458	\$13,960,465	\$87,993
Income from all other sources.....	\$1,514,000	\$1,385,751	\$128,219
Gross income.....	\$85,700,005	\$78,735,500	\$6,965,105
Expenses, total.....	\$68,081,875	\$62,885,888	\$5,245,987
Salaries and wages.....	\$20,646,092	\$18,766,970	\$1,879,722
Supplies, materials, and fuel.....	\$22,915,932	\$20,493,641	\$2,422,291
Rents, taxes, insurance, and miscellaneous.....	\$11,895,206	\$11,486,037	\$439,189
Interest on bonds.....	\$12,023,545	\$12,118,740	\$504,805
Analysis of income:			
Aggregate.....	\$85,700,005	\$78,735,500	\$6,965,105
Arc lighting, total.....	\$25,481,045	\$22,091,800	\$3,389,245
Commercial or other private.....	\$8,460,320	\$8,220,184	\$240,166
Public.....	\$17,020,725	\$13,871,646	\$3,149,079
Incandescent lighting, total.....	\$44,657,102	\$41,297,484	\$3,359,618
Commercial or other private.....	\$41,307,883	\$39,039,557	\$2,868,296
Public.....	\$2,749,249	\$2,257,927	\$491,322
Motor service.....	\$9,910,217	\$9,589,677	\$70,540
Electric railway service.....	\$2,304,515	\$2,301,343	\$3,172
Electric heating.....	\$39,213	\$39,155	\$58
Charging automobiles.....	\$30,056	\$29,959	\$97
All other electric service.....	\$1,764,457	\$1,750,321	\$14,126
All other sources.....	\$1,514,000	\$1,385,751	\$128,219
Analysis of supplies, materials, and fuel:			
Aggregate cost.....	\$22,915,932	\$20,493,641	\$2,422,291
Meters—			
Number.....	27,632	25,739	1,893
Cost.....	\$416,994	\$390,569	\$26,425
Motors—			
Number.....	602	572	30
Cost.....	\$30,099	\$29,202	\$897
Transformers—			
Number.....	13,288	7,843	5,445
Cost.....	\$365,028	\$326,407	\$38,621
Incandescent lamps—			
Number.....	8,839,905	8,399,571	440,334
Cost.....	\$1,507,249	\$1,426,224	\$81,025
Incandescent lamp fittings, sockets, etc., cost.....	\$177,236	\$154,517	\$22,719
Carbons for arc lamps—			
Number.....	94,086,596	\$82,156,930	12,529,666
Cost.....	\$1,051,386	\$900,788	\$150,593
Globes for arc lamps—			
Number.....	485,073	428,970	56,094
Cost.....	\$170,929	\$150,509	\$20,420
Arc lamp repairs, cost.....	\$244,537	\$212,231	\$32,306
Poles or other supports, cost.....	\$246,587	\$191,617	\$26,970
Wire and cable, cost.....	\$1,152,915	\$1,081,380	\$71,535
Mill supplies (oil, waste, etc.), cost.....	\$712,797	\$617,911	\$94,886
All other materials, cost.....	\$1,853,644	\$1,747,896	\$105,648
Power purchased, cost.....	\$2,130,759	\$2,007,193	\$123,566
Freight paid, not included in other items.....	\$1,120,363	\$939,512	\$150,851
Fuel cost—			
Coal—			
Tons.....	4,817,597	4,249,137	568,460
Cost.....	\$9,943,125	\$8,749,394	\$1,193,731
Crude petroleum, cost.....	\$721,388	\$700,136	\$21,702
Natural gas, cost.....	\$254,269	\$220,460	\$33,809
Manufactured gas, cost.....	\$28,654	\$20,135	\$8,519
All other fuel, cost.....	\$687,628	\$499,560	\$158,063
Average number of employees and total salaries and wages:			
Salaried officials and clerks—			
Average number, total.....	6,996	6,046	950
Salaries, total—			
General officers—			
Average number.....	1,587	1,416	171
Salaries.....	\$1,501,522	\$1,465,471	\$36,051
Other officers, managers, superintendents, etc.—			
Average number.....	2,398	1,875	518
Salaries.....	\$2,445,277	\$2,088,298	\$356,929
Clerks—			
Average number.....	3,016	2,755	261
Salaries.....	\$1,716,881	\$1,652,480	\$64,401
Wage-earners—			
Average number, total.....	23,830	20,868	2,467
Wages, total—			
Foremen—			
Average number.....	1,000	948	57
Wages.....	\$958,788	\$910,972	\$42,766

TABLE 197.—DETAILED SUMMARY, UNITED STATES: 1902—Continued.

ITEMS.	Total.	Private sta-tions.	Municipal stations.
Average number of employees and total salaries and wages—Continued.			
Wage-earners—Continued.			
Average number and wages—Continued.			
Inspectors—			
Average number	571	546	25
Wages	\$415,904	\$397,988	\$17,921
Engineers—			
Average number	4,587	3,743	844
Wages	\$3,259,870	\$2,721,127	\$538,743
Firemen—			
Average number	8,456	2,951	505
Wages	\$1,963,405	\$1,717,149	\$246,316
Dynamo and switchboard men—			
Average number	1,978	1,872	106
Wages	\$1,351,676	\$1,286,066	\$65,611
Linenmen—			
Average number	4,217	3,868	349
Wages	\$2,710,841	\$2,510,269	\$200,572
Mechanics—			
Average number	1,057	1,009	48
Wages	\$796,355	\$768,694	\$27,661
Lamp trimmers—			
Average number	2,637	2,318	319
Wages	\$1,654,462	\$1,460,046	\$194,416
All other employees—			
Average number	3,827	3,613	214
Wages	\$1,876,801	\$1,783,466	\$88,335
Analysis of miscellaneous expenses:			
Total.....	\$11,895,206	\$11,456,087	\$439,169
Rent of stations, supports, conduits, etc.....	\$1,011,691	\$1,001,504	\$10,187
Rent of offices.....	\$275,007	\$270,446	\$4,561
Taxes.....	\$2,665,005	\$2,654,885	\$10,120
Injuries and damages.....	\$248,304	\$246,545	\$1,759
Insurance.....	\$893,567	\$827,926	\$65,641
Ordinary repairs of buildings and machinery.....	\$2,701,747	\$2,480,217	\$221,530
All other.....	\$4,099,885	\$3,974,514	\$125,371
Electric line construction:			
Aggregate miles—			
Mains	107,263.63	98,352.95	13,910.68
Feeders	17,880.51	16,452.28	1,428.23
Lighting and stationary motor service, miles—			
Mains, total	107,184.18	98,278.45	13,910.68
Feeders, total	17,760.26	16,832.03	1,428.23
Underground—			
Mains	5,847.71	5,408.55	439.16
Feeders	2,276.55	2,262.02	14.53
Overhead—			
Mains	101,304.26	87,883.63	13,470.63
Feeders	15,472.34	14,061.50	1,410.84
Submarine—			
Mains	82.16	31.27	0.89
Feeders	11.37	8.51	2.86
Electric railway car service owned by lighting companies, miles—			
Mains	79.50	79.50	-----
Feeders	120.25	120.25	-----
Power and generating equipment:			
Steam engines—			
Number, total	5,930	4,870	1,060
Horsepower, total	1,879,941	1,232,923	147,018
500 horsepower and under—			
Number	6,451	4,407	1,044
Horsepower	849,836	715,418	133,918
Over 500 and under 1,000 horsepower—			
Number	278	266	12
Horsepower	193,570	184,670	8,900
1,000 horsepower and over—			
Number	201	197	4
Horsepower	337,085	332,885	4,200
Water wheels—			
Number, total	1,390	1,308	82
Horsepower, total	438,472	427,254	11,218
500 horsepower and under—			
Number	1,187	1,107	80
Horsepower	173,903	164,325	9,578
Over 500 and under 1,000 horsepower—			
Number	90	89	1
Horsepower	57,816	57,176	640
1,000 horsepower and over—			
Number	113	112	1
Horsepower	206,753	205,763	1,000

TABLE 197.—DETAILED SUMMARY, UNITED STATES: 1902—Continued.

ITEMS.	Total.	Private sta-tions.	Municipal stations.
Power and generating equipment—Continued.			
Gas engines—			
Number	165	147	18
Horsepower	12,181	11,224	967
Auxiliary steam engines—			
Number	365	329	36
Horsepower	14,454	13,619	836
DYNAMOS—			
Number, total	12,484	10,682	1,822
Horsepower, total	1,624,980	1,472,996	151,984
Direct current, constant voltage—			
Number	8,823	8,405	418
Horsepower	442,446	418,913	23,533
Direct current, constant amperage—			
Number	3,539	2,957	582
Horsepower	195,581	157,768	37,763
Alternating and polyphase current—			
Number	5,122	4,300	822
Horsepower	987,008	896,916	90,688
Boosters—			
Number	198	184	0
Horsepower	17,911	17,785	176
Rotaries—			
Number	182	181	1
Horsepower	68,817	68,688	134
Storage battery cells in main plants—			
Number	6,881	5,981	900
Horsepower	16,955	16,835	20
Substation plants:			
Horsepower, total	552,950	551,467	1,483
Storage battery cells—			
Number	8,388	8,388	-----
Horsepower	25,284	25,284	-----
Transformers—			
Number	2,525	2,490	35
Horsepower	420,667	419,368	1,299
Rotary converters—			
Number	168	162	1
Horsepower	85,556	85,546	10
Miscellaneous—			
Number	140	135	5
Horsepower	21,443	21,260	174
Transformers on circuits for consumers:			
Number	207,151	179,081	28,070
Horsepower	922,774	822,668	100,106
Meters on consumers' circuits, total:			
Mechanical.....	582,689	526,011	56,678
Chemical.....	575,004	618,428	50,576
Output of stations:			
Kilowatt hours—			
Total for year.....	2,507,051,115	2,311,146,676	105,904,489
Average per day.....	6,960,783	6,413,012	547,771
Horsepower hours of current—			
Total for year.....	8,341,948,000	3,088,212,074	258,731,016
Average per day.....	9,294,456	8,566,281	728,225
Analysis of service:			
Arc lighting—number of lamps in service—			
Aggregate.....	385,608	334,908	50,795
Commercial or other private, total.....	178,973	168,180	5,793
Open.....	42,988	41,622	1,366
Inclosed.....	130,985	126,568	4,427
Direct current.....	104,170	101,849	2,927
Open.....	98,120	96,856	1,264
Inclosed.....	66,056	64,993	1,063
Alternating current.....	67,538	64,085	3,453
Open.....	8,733	8,631	102
Inclosed.....	68,805	60,404	8,351
All other.....	2,259	2,246	13
Open.....	1,185	1,185	-----
Inclosed.....	1,124	1,111	13
Public, total.....	211,725	166,728	45,002
Open.....	138,684	108,082	30,602
Inclosed.....	73,041	58,641	14,400
Direct current.....	154,749	119,520	36,220
Open.....	125,298	96,659	28,639
Inclosed.....	29,461	22,801	6,590
Alternating current.....	48,068	38,916	9,747
Open.....	4,630	2,681	1,949
Inclosed.....	48,438	36,635	7,708
All other.....	8,013	8,887	26
Open.....	8,756	8,742	14
Inclosed.....	167	145	12

TABLE 197.—DETAILED SUMMARY, UNITED STATES: 1902—Continued.

ITEMS.	Total.	Private stations.	Municipal stations.
Analysis of service—Continued.			
Incandescent lighting—number of lamps in service—			
Aggregate.....	18,194,044	16,616,598	1,577,451
Commercial or other private, total.....	17,738,384	16,243,863	1,404,531
16-candlepowers.....	15,261,067	13,890,281	1,370,786
32-candlepowers.....	514,679	484,246	30,438
All other candlepower.....	1,902,638	1,869,326	93,312
Public, total.....	455,660	372,740	82,920
16-candlepowers.....	298,776	235,842	60,934
32-candlepowers.....	59,988	47,063	12,925
All other candlepower.....	98,896	89,885	9,061
Motors in service—			
Stationary—			
Number.....	101,064	99,102	1,962
Horsepower.....	624,686	619,283	5,403
Railway car, number of cars served.....	2,379	2,370	9
Character of ownership:			
When installed—			
Individual.....	1,041	964	77
Corporation.....	1,921	1,828	93
Municipal.....	658	13	645
In 1902—			
Individual.....	756	756	.....
Corporation.....	2,049	2,049	.....
Municipal.....	815	.....	815
Character of service:			
Arc lighting—			
Commercial or other private	2,020	1,667	863
Public.....	2,522	1,810	712
Incandescent lighting—			
Commercial or other private	3,484	2,752	732
Public.....	2,491	1,889	602
Motor power—			
Stationary.....	1,093	975	118
Electric railway.....	159	167	2
All other	161	152	9
Stocks and bonds issued, total par value.....	\$639,125,363	\$627,515,875	\$11,609,488
Capital stock:			
Authorized, total.....	\$435,178,372	\$435,178,372	.....
Issued, total.....	\$372,951,952	\$372,951,952	.....
Dividends, total.....	\$6,189,837	\$6,189,837	.....
Common—			
Authorized.....	\$407,807,934	\$407,807,934	.....
Issued.....	\$349,080,281	\$349,080,281	.....
Dividends.....	\$5,560,341	\$5,560,341	.....
Preferred—			
Authorized.....	\$27,370,438	\$27,370,438	.....
Issued.....	\$23,871,671	\$23,871,671	.....
Dividends.....	\$629,496	\$629,496	.....
Bonds:			
Authorized.....	\$320,743,376	\$308,117,894	\$12,625,482
Outstanding.....	\$266,173,411	\$254,569,923	\$11,609,488
Interest.....	\$12,623,545	\$12,118,740	\$504,805
Cost of construction and equipment:			
To date.....	\$504,740,352	\$482,719,879	\$22,020,473
During the year.....	\$41,702,447	\$40,050,613	\$1,741,834

Electric Fire Alarm and Police Patrol Systems

TABLE 198.—ELECTRIC FIRE ALARM SYSTEMS, GROUPED ACCORDING TO POPULATION OF CITIES: 1902.

ITEM.	Total.	POPULATION GROUPS.				
		100,000 and over.	50,000 and under 100,000.	25,000 and under 50,000.	10,000 and under 25,000.	Under 10,000.
Number of cities or systems.....	764	36	87	76	221	394
Overhead construction:						
Miles of pole line, owned.....	2,798	869	350	262	524	793
Miles of pole line, leased.....	10,952	2,682	1,123	1,818	2,877	2,452
Wire mileage, total.....	28,202	14,172	2,755	2,866	4,475	3,934
Miles of single wire.....	27,721	18,849	2,788	2,837	4,369	3,928
Miles of single wire in cables.....	481	323	17	29	106	6
Underground construction:						
Street miles of conduit, owned.....	416	378	20	5	11	2
Street miles of conduit, leased.....	452	317	46	31	51	7
Wire mileage, total.....	11,485	10,647	462	127	178	21
Miles of single wire.....	619	387	42	36	61	3
Miles of single wire in cables.....	10,916	10,260	420	91	127	18
Number and character of boxes or signaling stations:						
Signaling, total number.....	87,789	16,028	3,787	4,665	7,159	6,100
Number on poles or posts.....	34,776	14,880	3,357	4,242	6,609	5,688
All other.....	2,963	1,148	430	423	550	412
Annunciating, total number.....	93	—	—	—	16	77
Number on poles or posts.....	84	—	—	—	16	68
All other.....	9	—	—	—	—	9
Special telephones, number.....	1,900	1,432	125	163	115	65
Fire alarms received, number.....	85,070	40,948	8,760	11,716	15,499	8,547
Central office equipment:						
Manual transmitters, number.....	155	91	10	18	25	11
Automatic transmitters, number.....	295	29	45	76	103	42
Receiving registers, all kinds, number.....	452	165	49	84	80	74
Receiving circuits, number.....	1,973	752	289	344	426	162
Transmitting circuits, number.....	1,361	440	265	259	297	100
Telegraph switchboards, number.....	214	55	21	35	71	32
Number of sections.....	259	84	25	30	81	33
Capacity, total.....	2,497	1,401	212	225	463	106
Telephone switchboards, number.....	62	39	9	7	5	2
Number of sections.....	153	105	28	8	10	2
Capacity, total.....	6,480	5,911	374	86	56	53
Single circuits, number.....	442	—	—	4	97	341
Central station power equipment:						
Engines, number.....	7	2	1	—	1	3
Horsepower, total.....	58	50	2	—	1	5
DYNAMOS, number.....	19	2	1	—	3	12
Horsepower, total.....	51	32	2	2	4	11
Motor generators and dynamotors, number.....	81	58	8	3	5	7
Horsepower, total.....	47	22	3	9	5	8
Batteries—						
Primary, number of cells.....	57,010	23,189	4,735	4,793	10,713	13,550
Storage, number of cells.....	49,327	16,364	10,469	8,950	9,629	3,905

NOTE.—These statistics relate to the application of the electric telegraph and telephone to the fire alarm and police patrol systems of the cities of the United States during the year ending December 31, 1902. They are confined to the physical equipment of the different systems and the amount of service rendered. Complete reports were obtained for all cities in which the systems were known to be in existence, with the exception of a few unimportant towns, in some of which the commercial telephone companies were utilized by the police and fire departments.

TABLE 109.—ELECTRIC POLICE PATROL SYSTEMS, GROUPED ACCORDING TO POPULATION OF CITIES: 1902.

ITEM.	Total.	POPULATION GROUPS.				
		100,000 and over.	50,000 and under 100,000.	25,000 and under 50,000.	10,000 and under 25,000.	Under 10,000.
Number of cities or systems	148	84	30	39	33	12
Overhead construction:						
Miles of pole line, owned.....	829	582	101	95	42	9
Miles of pole line, leased.....	3,187	1,589	587	613	302	146
Wire mileage, total.....	17,339	18,552	1,828	1,197	578	181
Miles of single wire	14,296	10,654	1,767	1,149	542	181
Miles of single wire in cables.....	3,043	2,898	61	48	36	.....
Underground construction:						
Street miles of conduit, owned.....	273	239	21	1	12	.....
Street miles of conduit, leased	505	425	91	20	29	.....
Wire mileage, total.....	9,011	8,646	178	69	118	.....
Miles of single wire	264	172	58	8	28	.....
Miles of single wire in cables.....	8,747	8,474	120	63	90	.....
Number and character of boxes or signaling stations:						
Signaling, total number.....	9,476	6,496	1,330	873	497	280
Number on poles or posts.....	6,747	4,217	1,127	772	399	232
All other	2,729	2,279	203	101	98	48
Telephoning, total number	1,170	798	95	115	154	8
Number on poles or posts.....	1,060	753	94	78	128	7
All other	110	45	1	87	26	1
Special telephones, number.....	1,998	1,668	197	112	17	4
Police calls received or sent, total	40,626,505	31,558,098	5,150,225	2,301,511	1,252,408	363,608
Telephone.....	23,393,812	20,430,896	1,439,191	1,404,791	925,731	193,208
All other	17,232,693	11,127,797	3,711,034	1,896,720	826,677	170,465
Central office equipment:						
Manual transmitters, number.....	83	40	14	10	8	2
Automatic transmitters, number.....	30	10	7	9	2	2
Receiving registers, all kinds, number.....	439	311	51	49	21	7
Receiving circuits, number.....	1,272	826	188	195	90	23
Transmitting circuits, number.....	983	577	138	166	88	14
Telegraph switchboards, number	70	42	12	10	4	2
Number of sections.....	84	49	12	11	9	3
Capacity, total	578	433	64	59	14	3
Telephone switchboards, number	187	142	13	20	11	1
Number of sections.....	224	158	17	33	15	1
Capacity, total	8,055	2,370	195	201	286	9
Single circuits, number.....	28	8	3	5	11	6
Central station power equipment:						
Motor generators and dynamotors, number	18	8	7	2	1	.....
Horsepower, total	18	8	2	7	1	.....
Batteries—						
Primary, number of cells.....	24,477	19,785	1,907	1,178	1,147	460
Storage, number of cells	11,817	4,823	8,430	2,230	742	74

Mines and Quarries

NOTE.—The statistics cover the calendar year ending December 31, 1902, and are limited to the operations at the mine or quarry. If manufacturing, such as cutting and dressing of stone or the reducing or milling of ore, was done at the mine or quarry, and it was impossible to separate the statistics for the two branches of industry, the report includes the manufacturing operations. The inquiry covers all ores and minerals produced in commercial quantities.

Number of mines and operators.—The term "mine" represents a distinct mining operation, one or more of which may be controlled by the same operator, but in some minerals, such as precious stones, small placer gold mining, and monazite, the mining operations in many instances are not carried on continuously at the same locality, and it is impossible to ascertain the number of distinct operations. The term "operator" represents the individual, company, or corporation that controls the mine. The distinct mining operations under the control of the same operator and located in the same county were included in one report or in separate reports to suit the convenience of the operator, but if the distinct operations were situated in different counties, separate reports were made for each county.

Values.—The values reported are the amounts received by the operator and should not be confused with the value of the metallic contents, such as refined gold or silver, copper, or pig iron.

Classification.—The statistics are presented separately for minerals or products, but in some cases, two or more of these products were obtained from the same mine or quarry and it was impracticable to separate the employees, wages, and expenses incident to the production of each. For instance, if the chief product of a quarry was sandstone, the report was classified as "sandstones and quartzites," though some of the product may have been sold as grindstones or oilstones. In order to avoid duplication, the by-products, when they form the finished product of the mine or quarry, are added to the classification to which they properly belong. The following statement gives the quantity and value of the by-products that it was possible to segregate, the names of the classifications to which they were added, also the classifications in which the employees, wages, and expenses incident to their production are included:

CLASSIFICATION TO WHICH BY-PRODUCT HAS BEEN ADDED.	PRODUCTION.		Classification to which by-product should be added to obtain a total that is comparable with employees, wages, and expenses.	
	Quantity.			
	Unit of measure.	Amount.		
Barytes.	Short tons	539	Lead and zinc.	
Buhrstones and millstones.	Stones	100	Siliceous crystalline rocks.	
Cement.		13,149	Limestones and dolomites.	
Clay.		400	Do.	
Feldspar.	Short tons	112	Flint.	
Flint.	do	1,254	Feldspar.	
Grindstones and pulpstones.	do	35,503	Sandstones and quartzites.	
Infusorial earth, tripoli, and pumice.	do	175	Talc and soapstone.	
Lead and zinc.	Pounds	1,625,813	Barytes.	
Limestones and dolomites.		37,212	Coal, bituminous.	
Do.		336	Cement.	
Do.		124,637	Sandstones and quartzites.	
Marble.		5,100	Limestones and dolomites.	
Mineral pigments, crude.		8,483	Slate.	
Natural gas.		525	Petroleum.	
Oilstones, whetstones, and scythestones.	Short tons	180	Sandstones and quartzites.	
Do.	do	595	Grindstones and pulpstones.	
Petroleum.	Barrels	1,520	Natural gas.	
Sandstones and quartzites.		1,273	Limestones and dolomites.	
Do.		510	Grindstones and pulpstones.	
Silica sand.		50,811	Sandstones and quartzites.	
Sulphur and pyrite.	Long tons	11,483	Coal, bituminous.	

Such a large percentage of gold, silver, copper, lead, and zinc are often obtained from the same ores that it was impracticable to segregate their values and at the same time to present products which would be in any degree harmonious with the employees, wages, and expenses incident to their production. The quantity and value of these metals are not definitely determined until the ore has been smelted. Smelting is a manufacturing process and therefore omitted from the mining census, but the metallic contents of the ore and bullion produced during the year 1902 and the gross value of the same as computed from the reports to the Census Office was gold 3,242,039 ounces, valued at \$65,628,906; silver 54,198,344 ounces, valued at \$27,282,107; copper 639,038,392 pounds, valued at \$71,192,014; lead 338,125 short tons, valued at \$18,181,013; zinc 527,121 short tons, valued at \$9,006,341. These are the values at the mines. Gold and silver were reported at the Eleventh Census in troy ounces and coining value. Computed on the same basis, the production for 1902 amounted to 3,242,039 ounces of gold, valued at \$67,018,890, and 54,198,344 ounces of silver, valued at \$70,074,625. The Director of the Mint reports the production of gold for the United States, exclusive of Alaska, for the calendar year 1902 as 3,466,270 ounces, valued at \$71,654,200, and the production of silver as 55,408,000 ounces, valued at \$1,638,625. The disparity in these results is due to the fact that the Census Office collected the data directly from the mines and the Director of the Mint obtained the information from mints, assay offices, private refineries, and other reliable sources.

The quantities and values reported by the Director of the Mint represent the refined product, a portion of which may have been mined during the preceding year, and, as a portion of the product reported by the Census Office as mined during 1902 would be included in the report of the Director of the Mint for the following year, the totals for the two offices for the same year can not agree.

Development work.—The statistics for development work include all mines and quarries that reported employees of any character but no production. It is probable that in some cases the mines were idle and the employees reported were engaged in preserving the property from deterioration.

Employees and wages.—The average number of wage-earners employed during the entire year and the average number employed during each month, also the total number of days that the mine was

in operation were called for. The average number was tested and corrected by using 12, the number of calendar months, as a divisor into the total of the average number reported for each month.

Comparisons.—The statistics for the mining industries at prior censuses were not uniform, and no general summary was made at either the census of 1880 or 1890. Therefore exact comparisons are impossible. It is stated in the introduction to the report of the Eleventh Census that "in all, 630,419 persons found employment directly in the mining industry, and depended upon this industry as their regular means of support. They received in wages \$265,290,643, or more than 52 per cent of the entire value of what they produced. In addition, the other expenditures aggregated \$116,874,135." In 1902 there were 45,115 salaried officials, and their salaries amounted to \$39,010,506. The average number of wage-earners employed during the entire year was 581,708, and they received in wages \$369,944,631. The miscellaneous expenses and cost of supplies and materials amounted to \$195,621,645. The product was valued at \$796,526,417. The products reported for 1889 amounted to \$587,280,662, but they include salt and other substances omitted from the mining census of 1902. Reducing the production to a comparative basis as shown in Table 200, by including for 1902 the value of refined copper, gold, silver, lead, and zinc, and eliminating from 1889 the product not reported in 1902 makes the total for 1889 amount to \$444,012,998, as compared with \$384,040,869 for 1902, an increase of \$40,027,871, or 99.1 per cent.

Porto Rico.—The mining operations in the island of Porto Rico during 1902 were confined to production for local consumption, and it was impossible to secure reports on the schedules used for the canvass of continental United States. The statistics, therefore, are not included in these tables.

Alaska.—No canvass was made of the gold mines of Alaska, it being impossible to obtain satisfactory reports from the shifting mining population of the territory. The census statistics are, therefore, confined to two coal mines which were in operation during the year. The Census Office accepted the production of gold and silver from the Alaska fields for 1902, as reported by the Director of the Mint, which amounted to \$8,394,560.

TABLE 200.—COMPARATIVE STATEMENT, QUANTITIES AND VALUES OF MINERALS:
1902 AND 1889.

MINERALS.	Unit of measure.	1902		1889	
		Quantity.	Value.	Quantity.	Value.
Total, all minerals		\$884,040,869		\$444,012,998	
Antimony	Short tons	(¹)	(¹)	285	28,000
Asbestos	Short tons	2,505	46,200	80	1,800
Asphaltum and bituminous rock	Short tons	66,238	286,728	51,735	171,537
Barytes	Short tons	61,668	203,154	21,460	106,813
Bauxite	Long tons	29,222	128,206	221	97,335
Borax	Short tons	19,142	2,883,614	\$4,000	\$500,000
Buhrstones and millstones	Stones	8,667	59,809	(⁴)	85,155
Cement	Barrels	24,655,360	24,268,388	\$7,000,000	\$5,000,000
Clay	Short tons	1,455,857	2,081,072	\$329,665	\$685,578
Coal, anthracite	Long tons	36,940,710	76,173,586	40,714,721	65,879,514
Coal, bituminous	Short tons	260,216,844	290,858,483	95,629,026	94,846,809
Copper ^a	Pounds	639,033,392	71,192,014	231,246,214	26,907,309
Corundum and emery	Short tons	4,251	104,605	2,245	105,665
Crystalline quartz	Short tons	15,104	48,085	(⁴)	(⁴)
Feldspar	Short tons	46,287	250,424	\$7,806	\$39,870
Flint	Short tons	36,365	144,209	\$12,448	\$49,187
Fluorspar	Short tons	48,818	275,682	9,500	45,886
Fuller's earth	Short tons	11,492	98,144	(⁴)	(⁴)
Garnet	Short tons	3,926	192,820	(⁴)	(⁴)
Gold, coining value ^b	Troy ounces	3,242,089	67,018,890	1,590,869	32,880,744
Graphite	Short tons	27,438	227,508	7,003	72,662
Grindstones and pulpestones	Short tons	55,657	667,431	(⁴)	489,887
Gypsum	Short tons	7,681,683	2,089,341	207,769	764,118
Infusorial earth, tripoli, and pumice	Short tons	6,415	55,994	3,466	23,972
Iron ore	Long tons	35,567,410	65,465,321	14,518,041	38,351,978
Lead ore ^c	Short tons	338,125	18,181,013	181,141	6,467,137
Limestones and dolomites	Short tons	30,441,801			19,095,179
Lithographic stone	Short tons	(⁹)	(⁹)	18	243
Lithium ore	Short tons	1,245	25,750	(⁴)	(⁴)
Manganese ore	Long tons	16,477	177,911	24,197	240,559
Marble	Short tons	12,439	5,044,182	156,265	8,488,170
Marl	Pounds	373,266	12,741	156,265	63,956
Mica, sheet, scrap, and waste	Short tons	1,400	118,849	{ 49,500	{ 52,450
Mineral pigments, crude	Short tons	85,479	360,885	196	
Monazite	Pounds	802,000	64,160	{ 10,88,184	{ 10,483,766

¹ No production from domestic ores.

² Aluminum, quantity reduced from 47,468 pounds.

³ Not included as a part of the census; no statistics other than production reported.

⁴ Not reported.

^b Copper contents of all ores mined.

^c Fine gold contents of auriferous ores and placer bullion. Exclusive of Alaska in 1902.

^d Includes land plaster, calcined plaster, and crude gypsum.

^e Nonargentiferous lead ore and lead contents of argentiferous and copper ores.

^f No production.

^g Includes slate ground as a pigment, 2,000 long tons, value \$20,000.

TABLE 200.—COMPARATIVE STATEMENT, QUANTITIES AND VALUES OF MINERALS: 1902 AND 1889—Concluded.

MINERALS.	Unit of measure.	1902		1889	
		Quantity.	Value.	Quantity.	Value.
Natural gas.....	Short tons.....	3,876	\$30,867,863	2,991	\$21,097,099
Oilstones, whetstones, and scythes, stones.....	Pounds.....	113,968	32,980		
Ozokerite, refined.....	Pounds.....	(1)	(1)	50,000	2,500
Petroleum.....	Barrels.....	89,275,302	71,397,739	35,103,518	26,963,340
Phosphate rock.....	Long tons.....	1,548,720	4,922,943	550,245	2,987,776
Platinum and iridium.....	Troy ounces.....	294	21,814	500	2,000
Precious stones.....			328,450		188,807
Quicksilver:					
Crude.....	Short tons.....	11,727	1,550,090	2,750	(1)
Refined.....	Flasks.....	34,291		26,484	1,190,500
Sandstones and quartzites.....				10,601,171	12,086,076
Silica sand.....	Short tons.....	445,903	421,289	(1)	(1)
Siliceous crystalline rocks.....			18,257,914		14,464,095
Silver, coining value ³	Troy ounces.....	54,198,344	70,074,625	51,384,861	66,396,988
Slate.....			5,696,051		3,482,513
Sulphur and pyrite.....	Long tons.....	207,874	947,089	94,732	209,969
Talc and soapstone.....	Short tons.....	97,563	1,188,167	36,461	475,878
Tungsten.....	Short tons.....	184	5,975	(1)	(1)
Uranium and vanadium.....	Short tons.....	3,810	48,125	(1)	(1)
Zinc ore ⁴	Short tons.....	527,121	9,006,361	234,503	3,049,799
All other minerals ⁵	Short tons.....	3,536	49,256	3,151	73,000

¹ Not reported.² Platinum only; entire production obtained in placer mining and the refining of auriferous ores.³ Fine silver contents of argentiferous ores and placer bullion. Exclusive of Alaska in 1902.⁴ Zinc ore and zinc contents of auriferous and argentiferous ores.⁵ Includes chrome ore, magnesite, molybdenum, nickel and cobalt, and rutile for 1902, and chrome ore, nickel and cobalt, and rutile for 1889.

TABLE 201.—SUMMARY, BY MINERALS, ARRANGED ACCORDING TO CHARACTER OF ORE: 1902.

MINERALS.	Number of mines, quarries, or wells.	Number of operators.	WAGE-EARNERS.		Cost of supplies and materials, and miscellaneous expenses.	PRODUCT.	
			Average number.	Total wages.		Quantity (short tons).	Value.
Total.....	151,516	46,858	581,728	\$369,959,960	\$195,586,680		\$796,826,417
Metallic.....	4,280	4,081	110,404	84,046,224	56,808,024		215,453,587
Copper ore.....	144	144	26,007	21,151,405	12,490,640		51,178,036
Gold and silver.....	2,992	2,992	36,142	36,077,492	22,057,237		82,482,052
Iron ore.....	525	832	38,851	21,531,792	17,263,322	35,567,410	63,465,321
Lead and zinc ore.....	559	557	7,881	4,929,271	4,603,658	2,023,662	14,600,177
Manganese ore.....	19	19	184	74,924	21,073	116,477	177,911
Quicksilver.....	41	37	1,329	881,840	882,034	(*)	1,550,090
Fuels.....	140,463	36,017	372,559	236,877,041	109,734,150		469,297,671
Coal, anthracite.....	884	119	69,691	38,716,113	22,048,019	36,940,710	76,173,586
Coal, bituminous.....	5,652	4,409	280,638	181,482,288	41,573,381	220,216,844	290,878,483
Natural gas.....	15,806	1,967	4,678	2,936,279	12,519,512		30,867,563
Petroleum.....	118,671	29,522	17,652	13,242,361	33,593,238	48,275,302	71,397,739

¹ Long tons.² Includes 182,830 short tons lead, 491,332 short tons zinc.³ Quicksilver, 24,291 flasks (76½ pounds each) and cinnabar, 11,727 short tons.⁴ Barrels of 42 gallons.

TABLE 201.—SUMMARY, BY MINERALS, ARRANGED ACCORDING TO CHARACTER OF ORE: 1902—Concluded.

MINERALS.	Number of mines, quar- ries, or wells.	Number of oper- ators.	WAGE-EARNERS.		Cost of supplies and materials, and mis- cellaneous expenses.	PRODUCT.	
			Average num- ber.	Total wages.		Quantity (short tons).	Value.
Structural materials ..	6,044	5,746	86,295	\$44,054,537	\$25,822,881	.....	\$96,370,559
Cement	101	93	18,041	6,928,852	10,763,746	124,655,380	24,268,338
Clay	205	203	2,483	958,892	399,696	1,455,367	2,061,072
Limestones and dolomites	3,246	3,137	31,547	14,750,638	6,848,993	.....	30,441,801
Marble	83	75	4,070	2,212,640	1,208,699	.....	5,044,182
Sandstones and quartzites	1,304	1,211	10,448	6,153,060	2,176,970	.....	10,001,171
Siliceous crystalline rocks	908	853	18,836	11,972,996	3,808,271	.....	18,257,944
Shale	199	174	5,920	3,177,469	1,126,506	(^a)	5,096,051
Abrasive materials ..	82	75	610	296,914	122,719	.....	1,177,711
Buhrstones and millstones	29	29	86	39,562	3,289	36,667	59,808
Corundum and emery	5	5	47	32,871	28,893	4,251	104,605
Crystalline quartz	6	5	29	13,592	2,900	15,104	43,085
Garnet	7	7	118	69,632	15,080	8,926	182,820
Grindstones and pulpestones	9	9	210	99,598	55,782	55,657	667,431
Infusorial earth, tripoli, and pumice	11	10	35	18,682	4,560	6,415	55,094
Oilstones, whetstones, and scythestones	15	10	85	37,977	12,215	3,876	118,908
Chemical materials ..	228	174	8,835	3,818,088	2,844,918	.....	10,618,669
Borax	6	6	153	114,865	261,141	419,142	2,983,614
Fluorspar	22	18	269	110,002	54,976	48,818	275,682
Gypsum	62	45	1,472	759,258	542,529	5,681,633	2,089,841
Phosphate rock	115	87	5,971	1,980,083	1,229,889	1,548,720	4,922,943
Sulphur and pyrite	23	18	970	398,870	256,380	207,874	947,089
Pigments	84	77	592	236,872	126,293	.....	564,089
Barytes	49	42	336	180,285	48,827	61,668	203,154
Mineral pigments, crude	35	35	256	106,087	82,966	36,479	360,885
Miscellaneous	335	688	2,433	1,035,784	627,695	.....	3,344,181
Asbestos	4	4	23	8,250	9,991	2,505	46,200
Asphaltum and bituminous rock	24	24	156	79,570	41,681	66,288	286,728
Bauxite	38	7	150	59,763	54,958	29,222	128,206
Feldspar	27	26	252	107,444	69,685	746,287	250,424
Flint	19	17	119	47,454	32,938	836,365	144,209
Fuller's earth	4	4	114	33,775	81,023	11,492	98,144
Graphite	28	19	164	76,729	57,879	927,438	227,568
Lithium ore	3	3	6	3,744	1,465	2,245	25,750
Marl	11	11	13	4,769	4,162	12,489	12,741
Mica	49	38	98	44,043	24,876	(^b)	118,849
Monazite	23	22	88	25,318	2,389	11,802,000	64,180
Precious stones	46	460	108	88,017	25,262	.....	328,450
Silica sand	26	20	335	149,114	57,162	445,903	421,289
Talc and soapstone	20	20	771	273,083	206,068	97,583	1,138,167
Tungsten	4	4	2	1,260	330	184	5,075
Uranium and vanadium	3	3	19	17,040	8,500	3,810	48,125
All other minerals ^c ..	6	6	15	10,411	4,382	3,536	49,266

¹ Barrels.² 1,435,168 squares roofing slate reported; quantity for other uses not given.^a Stones.^b Includes 2,600 tons crude.^c Includes lime plaster, calcined plaster, and crude gypsum.^d Long tons.^e Includes 21,870 tons crude.^f Includes 3,162 tons refined.^g Includes 16,070 tons ground.^h Cut or sheet mica, 373,266 pounds; scrap or waste and rough as mined, 1,400 short tons.ⁱ Pounds.^j Includes chrome ore, 1; magnesite, 1; molybdenum, 1; nickel and cobalt, 2; rutile, 1.

TABLE 202.—SUMMARY BY STATES, TERRITORIES, AND GEOGRAPHIC DIVISIONS: 1902.

STATE OR TERRITORY.	Number of mines, quarries, or wells.	Number of oper- ators.	WAGE-EARNERS.		Cost of supplies and materials, and miscel- laneous expenses.	Value of product.
			Average number.	Total wages.		
United States	151,516	46,858	581,728	\$369,950,960	\$195,586,680	\$796,826,417
North Atlantic division.....	59,348	16,055	222,881	131,856,000	66,810,980	274,486,816
South Atlantic division.....	15,694	5,905	56,541	29,051,416	21,274,558	71,571,074
North Central division.....	66,765	19,178	177,584	114,317,675	62,480,776	251,874,635
South Central division.....	2,938	1,588	52,476	27,892,610	9,378,536	50,044,483
Western division ¹	6,781	4,207	72,246	60,842,589	35,640,880	148,899,409
Alabama.....	260	172	19,132	10,345,148	2,905,765	17,367,992
Arizona.....	113	168	5,323	5,059,065	3,455,010	11,197,375
Arkansas.....	120	181	2,944	1,945,479	389,860	2,840,841
California ¹	4,037	1,552	12,964	11,050,666	7,457,545	28,870,405
Colorado.....	1,147	1,011	20,519	18,874,836	10,039,390	40,603,286
Connecticut.....	90	78	1,497	808,772	295,998	1,425,950
Delaware.....	12	12	504	222,622	84,639	448,467
Florida.....	71	46	8,146	1,082,030	922,199	2,943,806
Georgia.....	149	127	2,820	1,085,047	797,212	3,117,358
Idaho.....	292	290	8,568	3,903,504	2,262,562	8,214,671
Illinois.....	1,116	1,013	40,523	26,986,397	5,059,726	38,234,410
Indiana.....	16,825	3,909	16,478	10,729,767	7,198,334	28,224,760
Indian Territory.....	79	89	4,814	3,185,322	686,395	4,321,380
Iowa.....	626	589	10,437	6,791,161	1,385,248	9,576,424
Kansas.....	1,253	898	8,726	5,680,593	2,141,604	10,700,285
Kentucky.....	1,142	665	10,654	5,193,792	1,808,884	8,553,423
Louisiana.....	8	3	61	34,444	33,174	279,527
Maine.....	185	141	3,634	2,284,789	598,520	3,656,134
Maryland.....	282	209	6,826	4,328,933	1,302,925	7,813,712
Massachusetts.....	261	234	4,242	2,525,405	1,080,126	4,671,855
Michigan.....	203	146	31,951	20,103,616	18,210,870	50,157,358
Minnesota.....	178	255	9,760	6,391,184	7,111,194	25,729,545
Missouri.....	1,045	978	15,351	8,757,387	4,977,454	20,284,656
Montana.....	281	271	10,539	11,812,150	5,800,860	28,265,085
Nebraska.....	36	35	178	96,935	18,963	143,391
Nevada.....	114	121	1,132	1,205,565	800,812	3,518,430
New Hampshire.....	56	62	1,253	806,494	161,121	1,176,312
New Jersey.....	162	151	5,645	2,658,727	2,689,638	6,605,402
New Mexico.....	161	207	2,275	1,646,833	638,004	2,686,473
New York.....	9,768	2,921	9,560	5,099,753	4,278,786	13,350,421
North Carolina.....	126	137	1,556	517,765	195,624	927,376
North Dakota.....	48	48	298	196,584	111,879	324,067
Ohio.....	44,934	11,338	87,178	28,222,680	17,837,478	57,186,922
Oklahoma.....	21	17	128	64,645	47,764	156,706
Oregon.....	294	293	1,166	1,033,075	551,860	2,087,339
Pennsylvania.....	48,672	12,266	190,935	114,122,437	56,830,759	236,871,417
Rhode Island.....	22	22	667	485,224	111,065	774,611
South Carolina.....	38	42	2,694	891,737	452,289	1,834,134
South Dakota.....	77	77	8,181	3,574,776	2,257,027	5,769,104
Tennessee.....	241	203	10,890	4,364,241	1,570,968	9,538,782
Texas.....	1,087	308	3,853	2,261,638	1,975,226	6,981,532
Utah.....	178	170	5,712	5,089,122	2,597,215	12,378,850
Vermont.....	192	160	5,898	3,114,399	1,458,877	5,904,705
Virginia.....	192	140	8,935	3,458,450	1,531,677	6,607,807
Washington.....	90	84	4,567	3,735,484	840,968	5,393,659
West Virginia.....	14,874	5,192	30,002	17,469,826	15,985,113	45,378,414
Wisconsin.....	411	392	3,583	1,987,565	1,231,889	4,427,813
Wyoming.....	74	50	4,486	3,432,059	1,099,095	5,684,286

¹ Includes also 2 operators in Alaska and Hawaii.

TABLE 203.—STATES AND TERRITORIES, BY MINERALS: 1902.

STATE OR TERRITORY, BY MINERALS.	Num- ber of mines, qua- rries, or wells.	Num- ber of operators.	WAGE-EARNERS.		Cost of supplies and materials, and mis- cellaneous expenses.	PRODUCT.	
			Aver- age num- ber.	Total wages.		Quantity (short tons).	Value.
United States	151,516	46,858	581,728	\$369,959,960	\$195,586,680	.....	\$796,826,417
Alabama.....	260	172	19,132	10,345,148	2,902,765	.....	17,367,092
Clay.....	5	5	83	9,684	5,859	40,065	19,742
Coal, bituminous.....	145	91	12,930	7,841,457	1,054,282	10,354,574	12,419,666
Gold and silver.....	4	4	34	12,182	6,040	.....	1,057
Iron ore.....	59	31	4,864	2,029,807	680,294	13,574,474	3,936,812
Limestones and dolomites.....	33	29	1,002	354,718	174,966	.....	759,617
Sandstones and quartzites.....	7	7	58	30,528	6,765	.....	42,706
All other minerals ²	7	5	211	66,827	74,559	.....	188,392
Arizona	113	158	5,323	5,059,065	3,453,016	.....	11,197,375
Copper ore.....	30	30	3,797	3,497,528	2,392,420	.....	8,279,224
Gold and silver.....	74	74	1,442	1,498,251	987,137	.....	2,764,677
Sandstones and quartzites.....	4	4	32	24,922	59,225	.....	107,910
All other minerals ³	5	50	52	38,364	14,225	.....	45,564
Arkansas	120	131	2,944	1,945,479	339,860	.....	2,840,341
Bauxite.....	19	3	80	14,504	14,777	14,645	18,920
Coal, bituminous.....	53	33	2,574	1,780,061	260,665	1,948,932	2,539,214
Limestones and dolomites.....	13	12	119	48,680	34,295	.....	118,163
Oilstones, whetstones, and scythestones.....	4	3	23	10,615	2,310	509	21,275
Sandstones and quartzites.....	18	17	111	52,170	9,445	.....	85,917
Siliceous crystalline rocks.....	8	3	10	4,260	1,595	.....	12,115
All other minerals ⁴	10	60	77	40,189	16,778	.....	54,737
California.....	4,037	1,552	12,964	11,050,666	7,457,545	.....	28,870,405
Asphaltum and bituminous rock.....	9	9	32	20,031	2,535	35,377	101,353
Borax.....	4	4	141	108,525	256,935	16,840	2,370,994
Clay.....	6	6	17	11,680	2,666	23,488	24,446
Coal, bituminous ⁵	10	10	182	126,558	53,407	87,196	273,398
Copper ore.....	7	7	496	446,247	226,530	.....	1,599,663
Gold and silver.....	1,020	1,020	7,989	7,101,008	8,938,857	.....	15,478,091
Limestones and dolomites.....	17	14	281	163,130	127,354	.....	521,003
Manganese ore.....	3	3	7	4,740	511	1,846	10,175
Marble.....	5	5	50	39,951	16,804	.....	92,298
Natural gas.....	29	15	21	10,800	29,435	.....	120,648
Petroleum.....	2,757	290	1,112	1,087,839	2,050,666	618,984,268	4,878,617
Precious stones.....	31	47	19	12,591	8,681	.....	65,000
Quicksilver.....	36	34	1,096	703,026	802,856	(?)	1,295,740
Sandstones and quartzites ⁶	15	11	363	269,433	95,725	.....	469,016
Siliceous crystalline rocks.....	64	62	920	687,658	154,661	.....	1,187,670
All other minerals ⁷	24	15	238	167,559	195,522	.....	442,195

¹ Long tons.² Includes operators as follows: Bauxite, 1 (3 mines); cement, 1; graphite, 1; marble, 1; sulphur and pyrite, 1.³ Includes operators as follows: Fluorspar, 2; lead and zinc ore, 1; precious stones, 46 (1 mine); siliceous crystalline rocks, 1.⁴ Includes operators as follows: Asphaltum and bituminous rock, 1; fuller's earth, 2; gold and silver, 1; manganese ore, 2; marble, 1; mineral pigments, crude, 1; phosphate rock, 1; precious stones, 50 (no mines); slate, 1.⁵ Includes 2 operators in Alaska.⁶ Barrels of 42 gallons.⁷ Quicksilver, 28,972 flasks (764 pounds each) and cinnabar, 10,427 short tons.⁸ Includes 1 operator in Hawaii.⁹ Includes operators as follows: Cement, 2; chrome ore, 1; gypsum, 1; infusorial earth, tripoli, and pumice, 1; lithium ore, 2; magnesite, 1; mica, 1 (10 mines); mineral pigments, crude, 2; sulphur and pyrite, 2; slate, 1; talc and soapstone, 1.

TABLE 203.—STATES AND TERRITORIES, BY MINERALS: 1902—Continued.

STATE OR TERRITORY, BY MINERALS.	Number of mines, quar- ries, or wells.	Number of oper- ators.	WAGE-EARNERS.		Cost of supplies and materials, and mis- cellaneous expenses.	PRODUCT.	
			Aver- age num- ber.	Total wages.		Quantity (short tons).	Value.
Oklahoma	21	17	128	\$64,546	\$47,704	.....	\$186,706
Limestones and dolomites	12	12	46	22,277	7,577	.....	50,541
All other minerals ¹	9	5	82	42,268	40,187	.....	186,165
Oregon	294	293	1,166	1,033,075	551,860	.....	2,087,389
Coal, bituminous	9	9	211	144,801	112,092	65,618	160,075
Gold and silver	202	202	855	816,711	414,107	.....	1,851,853
Limestones and dolomites	7	6	19	10,102	4,340	.....	20,183
Siliceous crystalline rocks	10	10	35	25,454	2,473	.....	38,429
All other minerals ²	6	6	46	36,007	18,848	.....	16,890
Pennsylvania	48,672	12,266	190,935	114,122,487	56,830,759	.....	236,871,417
Buhrstones and millstones	3	3	1	616	186	8199	1,978
Cement	17	14	5,376	2,411,652	4,760,290	49,860,802	10,223,267
Clay	19	19	812	130,768	56,174	161,546	288,611
Coal, anthracite	394	119	69,691	88,716,113	22,048,019	686,940,710	76,173,586
Coal, bituminous	1,023	514	92,005	59,848,902	14,403,450	98,574,307	106,032,460
Feldspar	12	12	125	50,876	41,497	15,121	115,690
Flint	4	3	27	11,713	7,562	69,785	42,721
Iron ore	47	42	1,140	436,207	227,798	5,822,932	1,225,453
Limestones and dolomites	907	896	6,934	2,881,205	1,288,038	.....	5,468,433
Marble	3	3	160	95,623	32,704	.....	160,423
Mineral pigments, crude	12	12	148	67,006	44,075	20,807	246,946
Natural gas	5,408	883	2,115	1,308,205	5,586,861	712,063,880	14,352,183
Petroleum	40,444	9,808	5,610	4,072,287	6,681,737	.....	15,266,093
Sandstones and quartzites	288	258	2,864	1,779,993	317,491	.....	2,800,108
Silica sand	14	11	141	64,015	24,827	268,262	205,076
Siliceous crystalline rocks	44	43	703	341,720	170,024	.....	661,062
Slate	91	84	3,426	1,879,175	729,059	.....	3,547,322
All other minerals ³	7	62	58	26,286	15,072	.....	69,797
Rhode Island	22	22	667	435,224	111,065	.....	774,611
Siliceous crystalline rocks	19	19	638	421,608	94,806	.....	734,623
All other minerals ⁴	3	3	29	13,616	16,259	.....	39,988
South Carolina	28	42	2,664	891,737	452,269	.....	1,834,134
Clay	8	8	198	45,448	14,797	20,186	107,825
Phosphate rock	10	10	1,498	435,553	227,953	5,827,557	950,208
Siliceous crystalline rocks	15	14	815	351,046	105,818	.....	598,848
All other minerals ⁵	5	10	183	59,690	43,661	.....	177,753

¹ Includes operators as follows: Gypsum, 3 (5 quarries); petroleum, 1 (3 wells); sandstones and quartzites, 1.

² Includes operators as follows: Borax, 1; copper ore, 2; gypsum, 1; nickel and cobalt, 1; sandstones and quartzites, 1.

³ Stones.

⁴ Barrels.

⁵ Long tons.

⁶ Includes 4,238 tons crude.

⁷ Barrels of 42 gallons.

⁸ Includes operators as follows: Crystalline quartz, 1; garnet, 1; graphite, 2; phosphate rock, 1; precious stones, 55 (no mines); talc and soapstone, 2.

⁹ Includes operators as follows: Graphite, 1; limestones and dolomites, 2.

¹⁰ Includes operators as follows: Gold and silver, 3; limestones and dolomites, 1; manganese ore, 1; precious stones, 5 (no mines).

TABLE 203.—STATES AND TERRITORIES, BY MINERALS: 1902—Continued.

STATE OR TERRITORY, BY MINERALS.	Number of mines, quar- ries, or wells.	Number of oper- ators.	WAGE-EARNERS.		Cost of supplies and materials, and miscel- laneous expenses.	PRODUCT.	
			Aver- age num- ber.	Total wages.		Quantity (short tons).	Value. ¹
Illinois.....	1,116	1,018	40,523	\$26,986,397	\$5,059,736	.....	\$38,234,410
Cement.....	6	6	488	261,926	221,502	11,058,084	769,251
Clay.....	8	7	42	19,602	5,915	59,152	88,463
Coal, bituminous.....	875	789	36,617	24,876,201	4,098,180	32,939,373	83,945,910
Fluorspar.....	5	5	71	28,845	18,264	18,860	123,000
Lead and zinc ore.....	14	14	104	51,565	31,548	23,970	90,619
Limestones and dolo- mites.....	160	150	3,178	1,737,363	685,287	.....	3,232,123
Natural gas ²	30	24	1	600	194	.....	2,844
Sandstones and quartz- ites.....	18	18	22	10,295	3,901	.....	32,200
Indiana.....	16,825	3,909	16,473	10,729,767	7,198,384	.....	28,224,760
Cement.....	9	7	568	266,949	478,615	11,879,891	1,286,228
Coal, bituminous.....	339	283	10,593	7,396,425	1,178,168	9,446,424	10,399,660
Limestones and dolo- mites.....	160	156	2,834	1,399,829	696,671	.....	2,865,691
Natural gas.....	6,881	880	938	686,860	2,427,713	7,081,344	6,526,622
Petroleum.....	9,439	2,567	1,463	1,045,925	2,418,126	47,480,896	.....
Sandstones and quartz- ites.....	9	9	41	19,567	4,746	.....	37,593
All other minerals ³	8	7	36	14,212	4,805	.....	27,622
Indian Territory.....	79	39	4,814	8,183,322	695,395	.....	4,321,330
Asphaltum and bitu- minous rock.....	6	6	28	18,185	8,512	2,566	11,754
Coal, bituminous.....	58	29	4,763	8,154,267	679,624	2,820,666	4,265,196
All other minerals ⁴	15	4	23	15,870	7,259	.....	44,520
Iowa.....	625	589	10,437	6,791,161	1,335,248	.....	9,676,424
Coal, bituminous.....	326	209	9,439	6,251,732	1,182,697	5,904,766	8,660,287
Gypsum.....	9	3	293	170,828	54,188	120,779	337,734
Lead and zinc ore.....	14	14	13	5,766	3,430	7,562	18,358
Limestones and dolo- mites.....	244	241	680	857,249	93,879	.....	649,984
Sandstones and quartz- ites.....	32	32	12	5,586	1,054	.....	15,061
Kansas.....	1,259	398	8,726	5,680,503	2,141,604	.....	10,700,285
Coal, bituminous.....	175	132	7,017	4,719,595	1,015,422	5,266,065	6,862,787
Lead and zinc ore.....	57	57	223	140,249	235,592	825,110	737,656
Limestones and dolo- mites.....	115	115	566	288,847	75,720	.....	670,536
Natural gas.....	414	57	100	65,952	205,968	.....	824,431
Petroleum.....	470	12	146	108,756	347,875	4331,749	292,464
Sandstones and quartz- ites.....	19	18	137	67,260	19,734	.....	105,509
All other minerals ⁵	9	7	587	290,434	241,293	.....	1,206,902
Kentucky.....	1,142	665	10,654	5,198,792	1,808,384	.....	8,538,423
Asphaltum and bitu- minous rock.....	5	5	65	22,574	19,301	22,498	68,704
Clay.....	5	5	48	17,080	11,796	26,562	44,256
Coal, bituminous.....	523	503	9,077	4,522,207	1,025,105	6,766,984	6,666,987
Fluorspar.....	14	10	193	76,107	86,280	29,080	140,410
Limestones and dolo- mites.....	70	69	774	319,700	69,252	.....	598,747
Natural gas.....	117	19	50	27,560	149,991	.....	365,611
Petroleum.....	392	39	79	69,189	375,117	4248,950	172,837
Sandstones and quartz- ites.....	9	9	168	68,589	11,093	.....	128,470
All other minerals ⁶	7	6	202	72,786	106,449	.....	349,421

¹ Barrels.² Includes 792 tons lead and 2,778 tons zinc.³ Includes petroleum, 1 (2 wells).⁴ Barrels of 42 gallons.⁵ Includes operators as follows: Clay, 2; oilstones, whetstones, and scythestones, 5 (6 quarries); sulphur and pyrite (operator reported under coal, bituminous).⁶ Includes operators as follows: Natural gas, 1; petroleum, 2 (18 wells); siliceous crystalline rocks, 1.⁷ Includes 186 tons lead and 876 tons zinc.⁸ Includes 3,468 tons lead and 21,642 tons zinc.⁹ Includes operators as follows: Cement, 2; gypsum, 5 (7 quarries).¹⁰ Includes operators as follows: Cement, 1 (2 quarries); iron ore, 3; lead and zinc ore, 1; oilstones, whetstones, and scythestones, 1.

TABLE 203.—STATES AND TERRITORIES, BY MINERALS: 1902—Continued.

STATE OR TERRITORY, BY MINERALS.	Num- ber of mines, quar- ries, or wells.	Num- ber of oper- ators.	WAGE-EARNERS.		Cost of supplies and materials, and mis- cellaneous expenses.	PRODUCT.	
			Aver- age num- ber.	Total wages.		Quantity (short tons).	Value.
Louisiana	8	3	61	\$34,444	\$33,174	.....	\$279,327
All minerals ¹	8	3	61	34,444	33,174	.....	279,327
Maine	135	141	3,684	2,284,780	598,520	.....	3,656,134
Limestones and dolo- mites	11	11	591	288,512	204,307	.....	745,132
Siliceous crystalline rocks	110	103	2,832	1,867,200	233,961	.....	2,659,450
Slate	7	7	217	110,818	40,825	.....	206,558
All other minerals ²	7	20	44	18,259	9,427	.....	44,994
Maryland	232	209	6,826	4,823,839	1,302,925	.....	7,813,712
Cement	4	4	170	74,677	69,793	3409,200	150,680
Clay	6	6	21	4,556	886	8,882	10,035
Coal, bituminous	44	39	4,936	3,468,117	822,290	5,271,609	5,579,869
Flint	6	5	65	21,983	18,199	49,798	56,551
Iron ore	29	28	70	22,340	14,953	24,367	46,911
Limestones and dolo- mites	102	100	430	159,793	156,401	.....	459,030
Mineral pigments, crude	4	4	4	1,716	1,890	2,520	10,950
Sandstones and quartz- ites	5	5	12	5,294	1,203	.....	15,405
Siliceous crystalline rocks	17	13	817	435,372	151,291	.....	758,203
Slate	6	6	145	72,179	23,601	.....	118,084
All other minerals ³	9	8	150	58,403	42,468	.....	113,974
Massachusetts	251	234	4,242	2,525,405	1,036,126	.....	4,671,855
Limestones and dolo- mites	11	8	203	99,740	143,801	.....	339,349
Marble	8	8	130	72,730	26,161	.....	165,489
Sandstones and quartz- ites	19	15	342	222,977	94,926	.....	487,366
Siliceous crystalline rocks	204	194	3,895	2,045,340	721,447	.....	8,451,397
All other minerals ⁴	9	9	172	84,618	49,791	.....	228,254
Michigan	203	146	81,951	20,103,616	13,210,870	.....	50,157,358
Cement	11	10	988	535,570	874,714	1,577,006	2,134,396
Coal, bituminous	31	30	1,445	1,075,805	188,662	964,718	1,653,192
Copper ore	20	20	13,887	8,744,892	5,161,920	.....	18,247,207
Gypsum	6	4	359	176,607	133,349	.....	459,621
Iron ore	80	41	14,456	9,182,763	6,665,578	11,135,215	26,665,860
Limestones and dolo- mites	30	29	665	325,379	126,163	.....	657,072
Sandstones and quartz- ites	9	8	151	86,108	34,485	.....	188,078
All other minerals ⁵	16	4	50	26,492	25,859	.....	121,937
Minnesota	176	255	9,760	6,391,184	7,111,194	.....	25,729,545
Iron ore	50	31	8,256	5,376,933	6,833,641	15,137,650	23,988,227
Limestones and dolo- mites ⁶	77	76	785	481,561	154,174	.....	905,857
Precious stones	110	.....	.....	.....	180	.....	8,000
Sandstones and quartz- ites	13	12	305	215,068	58,898	.....	347,472
Siliceous crystalline rocks	27	26	414	317,622	64,801	.....	478,989

¹ Includes operators as follows: Petroleum, 2 (7 wells); sulphur and pyrite, 1.² Includes operators as follows: Feldspar, 5; flint (operator reported under feldspar); mica, 2; precious stones, 13 (no mines).³ Barrels.⁴ Includes 1,895 tons crude.⁵ Long tons.⁶ Includes operators as follows: Feldspar, 2 (3 mines); gold and silver, 1; infusorial earth, tripoli, and pumice, 1; marble, 2; talc and soapstone, 2.⁷ Includes operators as follows: Asbestos, 1; clay, 1; corundum and emery, 1; feldspar (operator reported under flint); flint, 1; graphite, 1; infusorial earth, tripoli, and pumice, 1; iron ore, 1; sulphur and pyrite, 1; talc and soapstone, 1.⁸ Includes operators as follows: Clay, 1; graphite, 2; grindstones and pulpstones (operator reported under sandstones and quartzites); oilstones, whetstones, and scythestones (operator reported under sandstones and quartzites); petroleum, 1 (18 wells).⁹ Includes cement, 2.

TABLE 203.—STATES AND TERRITORIES, BY MINERALS: 1902—Continued.

STATE OR TERRITORY, BY MINERALS.	Num- ber of mines, quar- ries, or wells.	Num- ber of operators.	WAGE-EARNERS.		Cost of supplies and materials, and mis- cellaneous expenses.	PRODUCT.	
			Aver- age num- ber.	Total wages.		Quantity (short tons).	Value.
Missouri	1,045	973	15,351	\$8,757,367	\$4,977,454	.....	\$20,234,656
Barytes	34	28	239	99,799	21,356	31,334	104,677
Clay	25	25	120	66,169	22,827	121,401	134,862
Coal, bituminous	384	345	6,501	3,927,158	554,899	3,890,154	5,274,642
Iron ore	34	27	148	57,475	29,425	166,308	106,379
Lead and zinc ore	874	374	6,612	3,691,923	8,957,919	2,364,594	12,555,550
Limestones and dolomites	142	136	1,434	752,178	313,728	1,191	1,697,139
Natural gas	13	9	.....	.....	.....	.....	2,154
Sandstones and quartzites	10	10	56	31,989	8,285	.....	56,990
Siliceous crystalline rocks	11	9	179	104,624	40,360	.....	157,708
All other minerals ²	18	10	62	26,052	27,464	.....	94,525
Montana	281	271	10,539	11,812,150	5,900,360	.....	28,265,085
Coal, bituminous	37	34	1,587	1,516,043	352,623	1,560,823	2,448,447
Copper ore	27	27	6,388	7,339,773	4,105,235	.....	20,563,853
Gold and silver	176	176	2,278	2,688,052	1,379,445	4,688,636	.....
Limestones and dolomites	10	10	91	70,078	8,864	.....	104,725
Precious stones	3	3	39	43,664	6,750	.....	115,000
Sandstones and quartzites	8	8	57	52,117	9,692	.....	85,152
Siliceous crystalline rocks	3	3	21	26,488	2,861	.....	77,050
All other minerals ⁴	17	10	78	76,935	34,890	.....	187,822
Nebraska	36	35	178	95,935	13,963	.....	148,391
All minerals ⁵	36	35	178	95,935	13,963	.....	148,391
Nevada	114	121	1,182	1,205,565	800,812	.....	3,518,430
Gold and silver	104	104	1,075	1,162,887	772,184	.....	3,409,348
Sandstones and quartzites	3	3	2	1,583	601	.....	6,115
All other minerals ⁶	7	14	55	41,645	28,077	.....	102,967
New Hampshire	56	62	1,253	806,494	161,121	.....	1,176,312
Siliceous crystalline rocks	51	49	1,219	791,196	158,841	.....	1,147,097
All other minerals ⁷	5	13	34	15,298	2,280	.....	29,215
New Jersey	162	151	5,645	2,658,727	2,539,633	.....	6,605,402
Clay	34	34	702	293,232	86,879	494,800	612,721
Iron ore	15	9	1,660	773,286	459,346	1,441,879	1,228,661
Limestones and dolomites	27	25	187	80,654	30,877	8,172	188,650
Marl	10	10	6	2,860	295	.....	4,865
Sandstones and quartzites	22	22	418	232,480	54,482	.....	406,726
Siliceous crystalline rocks	49	46	947	433,166	217,697	.....	948,474
All other minerals ⁸	5	5	1,725	843,049	1,690,108	.....	3,215,302
New Mexico	161	207	2,275	1,646,838	638,004	.....	2,686,473
Coal, bituminous	80	25	1,439	1,027,460	220,503	1,048,763	1,500,230
Copper ore	17	17	164	128,483	76,266	.....	271,270
Gold and silver	91	91	519	409,779	290,926	.....	677,168
Precious stones	8	60	35	22,087	4,380	.....	51,600
Sandstones and quartzites	7	7	8	6,515	906	.....	12,291
All other minerals ⁹	8	7	109	52,509	45,023	.....	173,914

¹ Long tons.² Includes 124,537 tons lead and 240,057 tons zinc.³ Includes operators as follows: Cement, 1; infusorial earth, tripoli, and pumice, 2; mineral pigments, crude, 2; nickel and cobalt, 1; petroleum, 2 (10 wells); sulphur and pyrite, 2.⁴ Includes operators as follows: Corundum and emery, 1; flint, 1; graphite, 1 (8 mines); grind-manganese ore, 1; marble, 1.⁵ Includes operators as follows: Infusorial earth, tripoli, and pumice, 1 (2 quarries); limestones and dolomites, 3; sandstones and quartzites, 1.⁶ Includes operators as follows: Borax, 1; copper ore, 1; gypsum, 1; limestones and dolomites, 1; precious stones, 3 (1 mine); siliceous crystalline rocks, 1; sulphur and pyrite, 1.⁷ Includes operators as follows: Infusorial earth, tripoli, and pumice, 1; mica, 2; oilstones, whetstones, and scyphostones (2 quarries; operator reported in Arkansas); precious stones, 10 (no mines).⁸ Includes operators as follows: Cement, 2; lead and zinc ore, 1; slate, 1; talc and soapstone, 1; mica, 1; phosphate rock, 1.⁹ Includes operators as follows: Graphite, 1; iron ore, 1 (2 mines); lead and zinc ore, 1; marble, 2;

TABLE 203.—STATES AND TERRITORIES, BY MINERALS: 1902—Continued.

STATE OR TERRITORY, BY MINERALS.	Number of mines, quar- ries, or wells.	Number of oper- ators.	WAGE-EARNERS.		Cost of supplies and materials, and mis- cellaneous expenses.	PRODUCT.	
			Aver- age num- ber.	Total wages.		Quantity (short tons).	Value.
New York.....	9,768	2,921	9,560	\$5,099,753	\$4,278,786	.....	\$18,350,421
Buhrstones and mill- stones.....	22	22	59	28,021	2,338	15,158	39,570
Cement.....	21	20	2,459	1,203,313	1,689,412	24,734,147	3,656,589
Clay.....	8	7	14	6,396	2,143	8,909	14,585
Corundum and emery.....	3	8	9	4,446	4,746	2,886	44,625
Garnet.....	3	3	83	47,093	11,400	2,760	97,600
Graphite.....	3	3	71	35,583	20,667	31,375	77,437
Gypsum.....	17	15	214	100,996	45,256	95,318	259,170
Iron ore.....	15	13	965	432,039	493,587	4,555,321	1,362,087
Limestones and dolo- mites.....	181	178	2,422	1,214,742	594,082	.....	2,503,586
Marble.....	14	13	409	332,086	131,988	.....	577,298
Mineral pigments, crude.....	5	5	4	2,257	825	1,261	4,251
Natural gas.....	612	108	121	84,476	167,450	.....	346,471
Petroleum.....	8,443	2,123	408	296,713	690,744	1,119,730	1,580,552
Sandstones and quartz- ites.....	377	364	1,284	785,694	212,652	.....	1,408,699
Siliceous crystalline rocks.....	22	22	655	357,329	123,456	.....	651,014
Slate.....	11	11	126	69,561	24,654	.....	126,718
Talc and soapstone.....	4	4	163	83,680	54,039	71,100	615,350
All other minerals ⁶	7	7	34	15,328	4,397	.....	33,719
North Carolina.....	126	137	1,556	517,765	195,624	.....	927,376
Barytes.....	5	5	34	9,914	8,626	14,679	44,180
Gold and silver.....	15	15	203	66,822	36,728	.....	71,287
Limestones and dolo- mites.....	4	4	17	4,727	4,651	.....	23,153
Mica.....	28	26	50	15,160	6,078	.....	71,148
Monazite.....	28	22	88	25,918	2,839	802,000	64,160
Siliceous crystalline rocks.....	30	27	615	222,868	59,347	.....	338,750
Talc and soapstone.....	6	6	62	21,416	40,428	5,238	88,962
All other minerals ⁶	15	32	487	151,540	37,432	.....	225,786
North Dakota.....	48	48	298	196,534	111,879	.....	334,967
All minerals ¹⁰	48	48	298	196,534	111,879	.....	334,967
Ohio.....	44,934	11,338	87,173	23,222,680	17,837,478	.....	57,180,922
Cement.....	7	7	375	227,548	303,151	2597,088	714,561
Clay.....	81	81	120	58,818	19,418	142,440	101,305
Coal, bituminous.....	648	513	25,968	16,693,464	3,702,239	28,519,894	26,953,789
Grindstones and pulp- stones.....	7	7	139	64,288	29,759	49,957	560,412
Iron ore.....	12	9	111	38,901	1,901	422,657	41,976
Limestones and dolo- mites.....	259	249	3,065	1,454,828	700,110	.....	3,204,998
Natural gas.....	1,852	417	699	441,581	1,630,424	.....	2,855,458
Petroleum.....	42,483	10,002	4,017	2,915,787	10,401,653	21,014,231	20,757,859
Sandstones and quartz- ites.....	115	91	2,363	1,171,674	964,848	.....	2,078,754
Silica sand.....	10	7	155	69,675	21,164	182,921	152,274
Sulphur and pyrite.....	6	3	1	403	.....	48,069	25,129
All other minerals ¹¹	4	2	165	86,213	63,811	.....	240,917

¹ Stones.² Barrels.³ Includes 50 tons crude.⁴ Long tons.⁵ Barrels of 42 gallons.⁶ Includes operators as follows: Crystalline quartz, 1; feldspar, 1; flint, 2; infusorial earth, tripoli, and pumice, 1; lead and zinc ore, 1; sulphur and pyrite, 1.⁷ Cut or sheet mica, 303,818 pounds; scrap or waste and rough as mined, 544 short tons.⁸ Pounds.⁹ Includes operators as follows: Buhrstones and millstones (operator reported under siliceous crystalline rocks); clay, 3; coal, bituminous, 1; copper ore, 2; garnet, 1; graphite, 2; iron ore, 3; precious stones, 18 (1 mine); sandstones and quartzites, 2.¹⁰ Includes operators as follows: Cement, 1; coal, bituminous, 47.¹¹ Includes operators as follows: Gypsum (2 quarries; operator reported in Michigan); oilstones, whiststones, and scythestones, 1; phosphate rock, 1.

TABLE 203.—STATES AND TERRITORIES, BY MINERALS: 1902—Continued.

STATE OR TERRITORY, BY MINERALS.	Number of mines, quar- ries, or wells.	Number of oper- ators.	WAGE-EARNERS.		Cost of supplies and materials, and mis- cellaneous expenses.	PRODUCT.	
			Aver- age num- ber.	Total wages.		Quantity (short tons).	Value.
Oklahoma	21	17	128	\$64,546	\$47,704	.....	\$186,706
Limestones and dolomites	12	12	46	22,277	7,577	.....	50,541
All other minerals ¹	9	5	82	42,268	40,187	.....	186,165
Oregon	294	293	1,166	1,033,075	551,860	.....	2,087,389
Coal, bituminous	9	9	211	144,801	112,092	65,618	160,075
Gold and silver	202	202	855	816,711	414,107	.....	1,851,853
Limestones and dolomites	7	6	19	10,102	4,340	.....	20,183
Siliceous crystalline rocks	10	10	35	25,454	2,473	.....	38,429
All other minerals ²	6	6	46	36,007	18,848	.....	16,890
Pennsylvania	48,672	12,266	190,935	114,122,487	56,830,759	.....	236,871,417
Buhrstones and millstones	3	3	1	616	186	8199	1,978
Cement	17	14	5,376	2,411,652	4,760,290	49,860,802	10,223,267
Clay	19	19	812	130,768	56,174	161,546	288,611
Coal, anthracite	394	119	69,691	88,716,113	22,048,019	686,940,710	76,173,586
Coal, bituminous	1,023	514	92,005	59,848,902	14,403,450	98,574,307	106,032,460
Feldspar	12	12	125	50,876	41,497	15,121	115,690
Flint	4	3	27	11,713	7,562	69,785	42,721
Iron ore	47	42	1,140	436,207	227,798	5,822,932	1,225,453
Limestones and dolomites	907	896	6,934	2,881,205	1,288,038	.....	5,468,433
Marble	3	3	160	95,623	32,704	.....	160,423
Mineral pigments, crude	12	12	148	67,006	44,075	20,807	246,946
Natural gas	5,408	883	2,115	1,308,205	5,586,861	712,063,880	14,352,183
Petroleum	40,444	9,808	5,610	4,072,287	6,681,737	.....	15,266,093
Sandstones and quartzites	288	258	2,864	1,779,993	317,491	.....	2,800,108
Silica sand	14	11	141	64,015	24,827	268,262	205,076
Siliceous crystalline rocks	44	43	703	341,720	170,024	.....	661,062
Slate	91	84	3,426	1,879,175	729,059	.....	3,547,322
All other minerals ³	7	62	58	26,286	15,072	.....	69,797
Rhode Island	22	22	667	435,224	111,065	.....	774,611
Siliceous crystalline rocks	19	19	638	421,608	94,806	.....	734,623
All other minerals ⁴	3	3	29	13,616	16,259	.....	39,988
South Carolina	28	42	2,664	891,737	452,269	.....	1,834,134
Clay	8	8	198	45,448	14,797	20,186	107,825
Phosphate rock	10	10	1,498	435,553	227,958	5,827,557	950,208
Siliceous crystalline rocks	15	14	815	351,046	105,818	.....	598,848
All other minerals ⁵	5	10	183	59,690	43,661	.....	177,753

¹ Includes operators as follows: Gypsum, 3 (5 quarries); petroleum, 1 (3 wells); sandstones and quartzites, 1.

² Includes operators as follows: Borax, 1; copper ore, 2; gypsum, 1; nickel and cobalt, 1; sandstones and quartzites, 1.

³ Stones.

⁴ Barrels.

⁵ Long tons.

⁶ Includes 4,238 tons crude.

⁷ Barrels of 42 gallons.

⁸ Includes operators as follows: Crystalline quartz, 1; garnet, 1; graphite, 2; phosphate rock, 1; precious stones, 55 (no mines); talc and soapstone, 2.

⁹ Includes operators as follows: Graphite, 1; limestones and dolomites, 2.

¹⁰ Includes operators as follows: Gold and silver, 3; limestones and dolomites, 1; manganese ore, 1; precious stones, 5 (no mines).

TABLE 203.—STATES AND TERRITORIES, BY MINERALS: 1902—Continued.

STATE OR TERRITORY, BY MINERALS.	Number of mines, quar- ries, or wells.	Num- ber of operators.	WAGE-EARNERS.		Cost of supplies and materials, and miscel- laneous expenses.	PRODUCT.	
			Aver- age num- ber.	Total wages.		Quantity (short tons).	Value.
South Dakota	77	77	3,131	\$3,374,776	\$2,257,027	.....	\$6,769,104
Gold and silver	40	40	2,914	3,217,456	2,176,729	.....	6,464,258
Limestones and dolo- mites	10	10	55	48,714	10,821	.....	86,605
Mica	3	3	22	18,288	11,985	(1)	18,430
Natural gas	6	3	.....	.....	.....	.....	10,280
Sandstones and quartz- ites	12	12	94	69,509	14,372	.....	110,789
All other minerals ^a	6	9	46	25,809	43,120	.....	78,722
Tennessee	241	203	10,890	4,804,241	1,570,968	.....	9,533,782
Barytes	6	6	26	7,525	1,015	3,255	14,647
Clay	9	9	46	18,140	4,512	14,650	27,171
Coal, bituminous	84	73	6,220	3,213,532	822,590	4,382,968	5,399,721
Iron ore	22	13	1,299	512,702	256,394	3,874,542	1,123,527
Limestones and dolo- mites	51	44	698	222,475	112,657	.....	482,038
Marble	11	10	607	218,764	29,993	.....	518,256
Phosphate rock	40	37	1,597	498,809	175,597	3,432,603	1,308,872
Sandstones and quartz- ites	3	3	10	4,086	989	.....	7,670
All other minerals ^b	15	8	887	178,208	167,221	.....	651,885
Texas	1,067	308	3,853	2,261,639	1,975,226	.....	6,981,532
Clay	3	3	.....	.....	150	310	455
Coal, bituminous	26	24	1,979	991,391	201,304	901,912	1,477,245
Limestones and dolo- mites	35	34	275	124,272	42,680	.....	228,632
Natural gas	14	5	.....	.....	2,737	.....	14,953
Petroleum	955	211	723	699,209	1,889,118	18,515,017	4,174,731
Quicksilver	5	8	233	87,414	79,678	(6)	254,350
Sandstones and quartz- ites	13	13	191	100,399	28,905	.....	165,565
Siliceous crystalline rocks	8	8	56	41,184	7,399	.....	60,003
All other minerals ^c	5	7	396	217,770	223,260	.....	605,563
Utah	178	170	5,712	5,089,122	2,597,215	.....	12,378,350
Coal, bituminous	39	36	1,576	1,254,090	290,227	1,574,521	1,797,454
Copper ore	13	13	487	439,612	237,674	.....	1,459,192
Gold and silver	83	83	3,849	3,176,599	1,882,426	.....	8,500,904
Limestones and dolo- mites	16	15	103	77,296	79,503	.....	186,663
Sandstones and quartz- ites	10	6	65	50,225	9,530	.....	105,011
Siliceous crystalline rocks	5	5	1	330	193	.....	1,479
All other minerals ^d	12	12	131	90,970	97,652	.....	327,647
Vermont	192	160	5,398	3,114,399	1,458,877	.....	5,904,705
Limestones and dolo- mites	14	13	156	65,083	122,111	.....	225,703
Marble	22	16	2,074	1,206,268	749,178	.....	2,628,164
Siliceous crystalline rocks	74	68	1,505	958,950	843,541	.....	1,570,423
Slate	76	58	1,639	874,263	242,110	.....	1,464,918
All other minerals ^e	6	5	24	9,895	1,337	.....	15,497

¹Cut or sheet mica, 6,000 pounds; scrap or waste and rough as mined, 205 short tons.²Includes operators as follows: Cement, 1; graphite, 2; gypsum, 2; lithium ore, 1; precious stones, 3 (no mines).³Long tons.⁴Includes operators as follows: Copper ore, 2; fluorspar, 1; gold and silver, 2; mineral pigments, crude, 1; natural gas, 1 (2 wells); petroleum, 1 (7 wells).⁵Barrels of 42 gallons.⁶Quicksilver, 5,319 flasks (7½ pounds each) and cinnabar, 1,300 short tons.⁷Includes operators as follows: Asphaltum and bituminous rock, 1; cement, 2; gold and silver, 1; gypsum, 2; iron ore, 1 (2 mines).⁸Includes operators as follows: Asphaltum and bituminous rock, 2; cement, 1; clay, 1; gypsum, 1; iron ore, 4; marble, 2; sulphur and pyrite, 1.⁹Includes operators as follows: Buhrstones and millstones, 1; clay, 2; iron ore, 1; mineral pigments, crude, 1; oilstones, whetstones, and seythesstones (1 quarry; operator reported in Arkansas.)

TABLE 203.—STATES AND TERRITORIES, BY MINERALS: 1902—Concluded.

STATE OR TERRITORY, BY MINERALS.	Num- ber of mines, quar- ries, or wells.	Num- ber of oper- ators.	WAGE-EARNERS.		Cost of supplies and materials, and mis- cellaneous expenses.	PRODUCT.	
			Aver- age num- ber.	Total wages.		Quantity (short tons).	Value.
Virginia	192	140	8,993	\$3,458,450	\$1,531,677	.....	\$6,607,807
Barytes	4	3	37	13,047	12,330	12,400	39,700
Buhrstones and mill- stones	3	3	17	6,725	340	1,964	11,485
Cement	3	3	178	83,423	122,587	284,000	927,050
Coal, bituminous	26	22	3,004	1,407,867	530,842	8,182,993	2,548,595
Gold and silver	5	5	48	11,584	4,455	.....	2,723
Iron ore	62	25	2,086	888,958	321,989	3,973,301	1,652,790
Limestones and dolo- mites	37	28	890	290,979	151,854	.....	535,113
Manganese ore	6	6	113	33,903	9,291	3,8,041	29,444
Siliceous crystalline rocks	17	17	460	190,822	34,756	.....	282,046
Slate	4	4	247	97,645	45,830	.....	160,951
Sulphur and pyrite	6	4	655	222,986	160,776	3,127,642	691,642
All other minerals ⁴	19	20	654	211,011	137,127	.....	520,700
Washington	90	84	4,567	3,735,484	840,968	.....	5,393,659
Coal, bituminous	27	22	3,931	3,220,263	653,407	2,681,214	4,572,295
Gold and silver	31	31	229	232,058	79,319	.....	388,351
Limestones and dolo- mites	12	12	147	87,850	36,923	.....	213,814
Marble	5	5	63	46,099	31,699	.....	61,176
Sandstones and quartz- ites	3	3	32	23,287	4,655	.....	30,725
Siliceous crystalline rocks	9	8	137	95,949	23,908	.....	147,278
All other minerals ⁴	3	3	28	30,028	10,987	.....	30,025
West Virginia	14,874	5,192	30,002	17,469,826	15,988,113	.....	48,378,414
Clay	4	4	41	25,022	12,039	57,506	48,266
Coal, bituminous	522	406	23,914	13,524,429	4,414,905	24,570,826	24,748,658
Limestones and dolo- mites	174	167	1,068	426,401	86,290	.....	616,366
Natural gas	949	63	634	410,845	2,817,708	.....	5,800,181
Petroleum	13,109	4,446	3,800	2,778,312	9,088,407	6,18,618,345	17,040,317
Sandstones and quartz- ites	110	100	453	272,123	46,033	.....	423,532
All other minerals ⁷	6	6	92	37,694	22,781	.....	116,094
Wisconsin	411	392	3,583	1,987,565	1,231,989	.....	4,427,618
Clay	3	3	36	16,050	4,317	2,785	23,178
Iron ore	16	10	1,361	837,661	628,108	3,788,996	1,800,864
Lead and zinc ore	90	90	417	192,209	111,308	3,21,990	473,652
Limestones and dolo- mites	216	207	1,062	539,169	337,202	.....	1,351,058
Sandstones and quartz- ites	62	62	199	109,066	20,801	.....	207,086
Siliceous crystalline rocks	18	15	391	236,495	61,620	.....	369,187
All other minerals ⁹	6	5	117	56,915	78,638	.....	202,883
Wyoming	74	50	4,486	3,432,059	1,099,098	.....	5,684,286
Coal, bituminous	36	22	4,197	3,207,545	894,275	4,429,491	5,236,339
Gold and silver	4	4	25	24,670	11,299	.....	4,923
Limestones and dolo- mites	3	3	7	5,640	227	.....	6,340
Sandstones and quartz- ites	12	12	74	58,897	6,628	.....	90,691
All other minerals ¹⁰	19	9	183	135,407	186,669	.....	345,993

¹ Stones.² Barrels.³ Long tons.⁴ Includes operators as follows: Asbestos, 1; copper ore, 1; flint, 1; gypsum, 2; infusorial earth, tripoli, and pumice, 2; lead and zinc ore (2 mines; operator reported under iron ore); marl, 1; mica, 2; mineral pigments, crude, 2; precious stones, 3 (no mines); rutile, 1; sandstones and quartzites, 2; talc and soapstone, 2.⁵ Includes operators as follows: Clay, 1; copper ore, 1; molybdenum, 1.⁶ Barrels of 42 gallons.⁷ Includes operators as follows: Cement, 1; grindstones and pulpstones, 2; iron ore, 1; silica sand, 2.⁸ Includes 2,623 tons lead and 19,376 tons zinc.⁹ Includes operators as follows: Cement, 2; copper ore, 1; graphite, 1 (2 mines); mineral pigments, crude, 1.¹⁰ Includes operators as follows: Copper ore, 1; graphite (1 mine; operator reported in South Dakota); grindstones and pulpstones (operator reported under sandstones and quartzites); gypsum, 2 (3 quarries); iron ore, 1; petroleum, 2 (18 wells); precious stones, 3 (no mines).

TABLE 204.—DETAILED SUMMARY, UNITED STATES: 1902.

Number of mines, quarries, or wells.....	151,516
Number of operators.....	46,858
Salaried officials, clerks, etc.:	
Total number.....	38,128
Total salaries.....	\$39,020,552
General officers—	
Number.....	4,591
Salaries.....	\$8,218,541
Superintendents, managers, foremen, surveyors, etc.—	
Number.....	15,538
Salaries.....	\$16,606,416
Foremen, below ground ¹ —	
Number.....	6,863
Salaries.....	\$6,208,807
Clerks—	
Number.....	11,136
Salaries.....	\$7,927,288
Wage-earners:	
Aggregate average number.....	581,728
Aggregate wages.....	\$369,960,960
Above ground—	
Total average number.....	221,505
Total wages.....	\$125,086,580
Engineers, firemen, and other mechanics—	
Average number.....	60,859
Wages.....	\$44,478,246
Miners or quarrymen and stonecutters—	
Average number.....	67,129
Wages.....	\$33,971,290
Boys, under 16 years—	
Average number.....	6,219
Wages.....	\$1,339,478
All other wage-earners—	
Average number.....	87,298
Wages.....	\$45,297,516
Below ground—	
Total average number.....	360,223
Total wages.....	\$244,873,439
Miners—	
Average number.....	257,301
Wages.....	\$184,674,193
Miners' helpers—	
Average number.....	18,736
Wages.....	\$11,496,910
Boys, under 16 years—	
Average number.....	5,638
Wages.....	\$1,548,889
All other wage-earners—	
Average number.....	78,548
Wages.....	\$47,153,428
Average number of wage-earners employed during each month:	
Men, 16 years and over—	
January.....	590,362
February.....	587,181
March.....	595,413
April.....	604,359
May.....	556,464
June.....	518,197
July.....	509,596
August.....	521,059
September.....	529,982
October.....	568,591
November.....	631,639
December.....	627,629
Boys, under 16 years—	
January.....	15,440
February.....	15,454
March.....	15,618
April.....	15,807
May.....	10,406
June.....	7,267
July.....	7,274
August.....	7,448
September.....	7,501
October.....	9,205
November.....	15,283
December.....	15,591
Contract work:	
Amount paid.....	\$20,677,988
Number of employees.....	21,183

¹ Foremen here reported should be added to the number of wage-earners below ground in order to ascertain the actual number employed below ground.

TABLE 204.—DETAILED SUMMARY, UNITED STATES: 1902—Concluded.

Miscellaneous expenses, total	\$71,771,718
Royalties and rent of mine and mining plant	\$34,530,718
Rent of offices, taxes, insurance, interest, and other sundries	\$37,241,000
Cost of supplies and materials	\$128,814,967
Product, value.....	\$795,826,417
Power:	
Total horsepower	2,867,562
Owned—	
Engines—	
Steam, number	64,179
Horsepower	2,432,963
Gas, or gasoline, number	18,506
Horsepower	259,695
Water wheels, number	980
Horsepower	60,897
Other power, number	1,162
Horsepower	84,546
Rented—	
Electric, horsepower	23,556
Other kind, horsepower	5,905
Electric motors owned, number	2,893
Horsepower	180,494
Supplied to other establishments, horsepower	2,852

TABLE 205.—DEVELOPMENT WORK, BY STATES AND TERRITORIES: 1902.

STATE OR TERRI- TORY.	Num- ber of mines, quar- ries, or wells.	SALARIED OFFI- CIALS, CLERKS, ETC.		WAGE-EARNERS.		CONTRACT WORK.		Cost of supplies and ma- terials, and miscella- neous ex- penses.
		Num- ber.	Salaries.	Average number.	Total wages.	Amount paid.	Number em- ployed.	
United States ..	4,126	2,684	\$2,693,902	13,638	\$12,801,935	\$2,664,526	7,019	\$7,475,461
Alabama ..	5	10	9,010	45	15,244			1,937
Arizona ..	381	382	459,452	2,246	2,329,945	197,324	317	1,049,162
Arkansas ..	6	1	900	1	350	4,500	5	50
California ..	492	319	320,189	1,575	1,426,819	180,596	255	998,096
Colorado ..	965	466	437,788	2,337	2,340,058	582,948	911	1,244,421
Florida ..	3	5	4,700	15	4,782	2,724	4	18,168
Georgia ..	9	7	8,868	40	15,817	200	1	7,772
Idaho ..	325	180	164,560	852	897,412	158,262	254	503,275
Illinois ..	3			5	2,125			2,925
Indiana ..	79	8	2,920	1	269	21,979	47	15,635
Indian Territory ..	13	14	21,055	80	50,515	10,300	21	85,391
Iowa ..	4	2	510	2	1,183	600	4	1,351
Kansas ..	108	16	5,892	19	16,463	97,511	73	101,641
Kentucky ..	213	40	23,481	33	25,693	185,788	209	90,477
Louisiana ..	12	4	1,170	9	8,610	65,373	37	17,289
Michigan ..	17	60	69,967	353	222,215			805,548
Minnesota ..	19	6	2,236	117	78,700	215,868	281	68,656
Missouri ..	32	20	10,220	67	48,213	12,149	26	25,577
Montana ..	129	77	83,099	520	592,626	65,797	810	818,193
Nevada ..	82	142	181,172	574	656,169	27,133	590	524,612
New Jersey ..	3	35	39,713	336	210,819			25,418
New Mexico ..	159	107	90,121	358	270,896	78,128	1,923	162,013
New York ..	7	11	16,569	96	50,403	500	4	8,205
North Carolina ..	29	42	33,005	344	102,431			65,479
Ohio ..	11	4	6,000	204	122,722	14,174	27	27,912
Oklahoma ..	17	1	100			8,750	14	750
Oregon ..	192	189	162,184	839	805,855	75,594	137	288,352
Pennsylvania ..	22	8	3,590	44	20,782	36,332	119	43,893
South Dakota ..	114	99	114,956	522	581,183			211,795
Tennessee ..	15			5	2,000	16,408	16	4,587
Texas ..	71	36	37,209	48	46,766	245,542	230	81,591
Utah ..	273	214	162,744	966	920,624	162,745	298	602,056
Virginia ..	5	8	4,535	51	17,964	158	1	86,057
Washington ..	151	122	112,337	520	557,313	75,684	198	277,063
West Virginia ..	23	14	7,731	51	26,645	46,315	76	79,740
Wisconsin ..	4	5	4,800	7	4,025			6,328
Wyoming ..	98	79	86,954	309	318,301	86,204	123	175,874
All other states ¹ ..	5	7	4,635	47	20,098			7,747

¹ Includes Connecticut, 1; Maryland, 2; New Hampshire, 1; South Carolina, 1.

TABLE 206.--DEVELOPMENT WORK, BY MINERALS: 1902.

MINERALS.	Number of mines, quarries, or wells.	SALARIED OFFICIALS, CLERKS, ETC.		WAGE-EARNERS.		CONTRACT WORK.		Cost of supplies and materials, and miscellaneous expenses.
		Number.	Salaries.	Average number.	Total wages.	Amount paid.	Number employed.	
All minerals ...	4,126	2,684	\$2,693,902	18,698	\$12,801,935	\$2,664,526	7,019	\$7,475,461
Asphaltum and bituminous rock ..	6	5	8,160	2	1,080			1,674
Cement ..	8	38	49,603	840	214,617			36,865
Coal, bituminous ¹ ..	31	49	48,442	426	271,365	38,767	135	193,040
Copper ore ..	15	55	64,208	302	184,424	200	1	174,377
Gold and silver ..	3,252	2,284	2,535,470	11,763	11,680,684	1,542,771	5,649	6,092,433
Graphite ..	3	3	1,420	3	1,480			2,773
Iron ore ..	37	28	20,715	267	156,602	216,168	286	212,074
Lead and zinc ore ..	25	24	16,759	71	43,697	8,149	17	19,615
Limestones and dolomites ..	3	4	2,800	38	10,490			6,325
Manganese ore ..	3	1	1,050	31	16,277	158	1	600
Marble ..	10	7	4,860	25	17,645			7,768
Natural gas ..	94	15	7,445	37	24,104	104,230	173	83,106
Petroleum ..	615	149	121,750	171	189,178	758,433	753	621,695
Quicksilver ..	10	8	9,525	35	27,498	160	1	8,124
Siliceouscrystalline rocks ..	4	4	3,600	88	44,640			1,950
Slate ..	3	1	900	18	4,952			
All otherminerals ² ..	12	9	8,195	37	13,412	500	3	13,042

¹ Includes coal, anthracite, 2 mines, in Pennsylvania.² Includes minerals as follows: Borax, 1; clay, 2; corundum and emery, 1; fluorspar, 2; lithographic stone, 1; phosphate rock, 2; sandstones and quartzites, 1; silica sand, 1; sulphur and pyrite, 1.